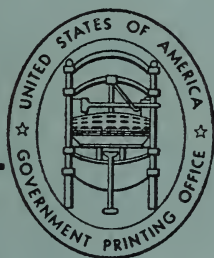


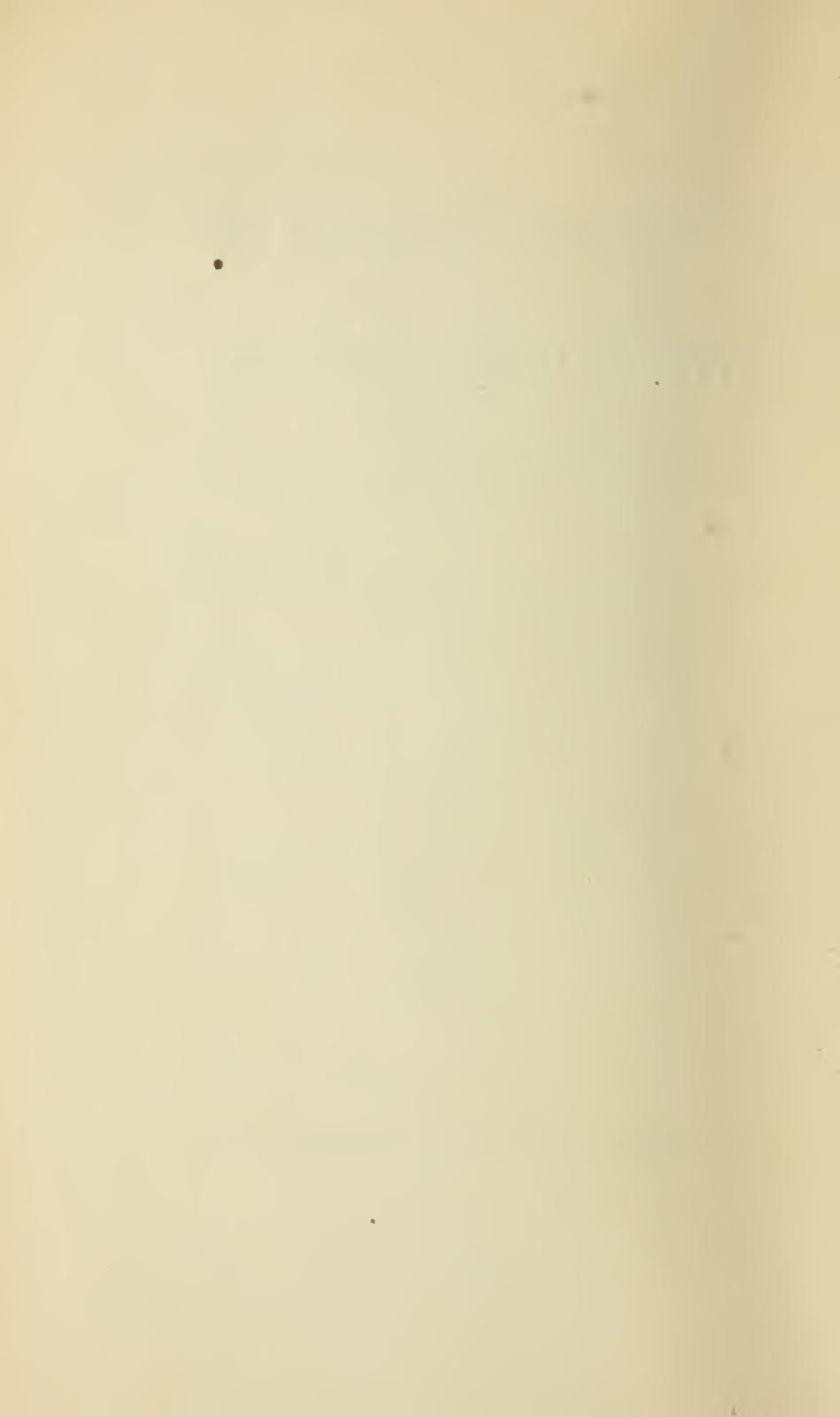
Annual Report of the Public Printer 1947



Annual Report of the Public Printer

For the Fiscal Year Ended June 30, 1947

U. S. Government Printing Office • Washington 1947



Letter of Transmittal

U. S. GOVERNMENT PRINTING OFFICE

Washington, D. C.

November 17, 1947

To the Congress of the United States: This Report, submitted pursuant to the provisions of the act of January 12, 1895 (sec. 19, ch. 23, 28 Stat. 603), covers the work of the Government Printing Office for the fiscal year ended June 30, 1947.

Under the 1940 Legislative Branch Appropriation Act, the requirement for the printing of an annual report was again suspended, provided that the original copy be kept on file in the office of the head of each department or independent establishment. Subsequent appropriation acts have extended this authorization.

Therefore, this being the first printed report since 1939, a fuller description of the operations of the Government Printing Office than would otherwise be given is included.

The volume of the Government's printing requirements remains at a much higher level than it was in the prewar period despite a sizable reduction in the immediately preceding two fiscal years. As shown in greater detail in the report, the year's cost of printing and binding and of blank paper and supplies processed during the fiscal year totaled \$53,009,753.69. This figure includes \$12,906,982.98 paid contractors for printing and binding work done by them and \$2,831,095 for paper and other materials and supplies furnished these contractors.

The extraordinary demands of Congress, the executive departments, the judiciary, and the independent establishments of the Government have put on this Office the burden of establishing a service organization adequate to their varied and often complicated needs. It is the purpose of this report to describe the service which the Government Printing Office has provided in the way of improved planning, more accurate cost controls, better production controls, and a higher quality of work delivered in accordance with requirements at lowest possible cost. I am strongly in favor of retaining and strengthening the present planning, scheduling, and accounting procedures. There is evidence

in the "customer" agencies' reaction to our personnel reductions affecting this work that they would not approve any action to reduce the service they are now receiving.

One of the serious difficulties which this Office had during the war and which continues into the present is the procurement of paper. Although the supply situation has eased to some extent, paper costs are still going up and up. Some grades are 200 percent above prewar levels, with no end in sight. I have discussed this matter fully on pages 1-7.

Since the 1939 report, the Office has occupied new buildings. It has added relatively little equipment. The condition of plant and equipment and of maintenance methods followed are fully described in the report.

Like every other large printing plant in the country, the Government Printing Office finds that modernization of its machinery is long overdue after 7 years of a self-imposed rigid policy of "replacements only," and even these were restricted to what was most urgent.

Construction and opportunities for procurement of machine equipment have not yet developed to a point where it is possible to undertake rapid over-all modernization. Nevertheless, manufacturers have made many notable advances in design and methods. Throughout the industry as a whole, limited installations of machinery and techniques have been made. This provides a basis for study and evaluation of their application to our present and future requirements.

On June 9, 1947, I appointed a committee under the chairmanship of our Consultant on Methods and Procedures to make a thorough-going study with a view to recommending the removal of outmoded machinery and the purchase of modern equipment to replace or expand facilities as required. The closing section of the report is devoted, in part, to a number of plant improvements and projects on the need for new equipment and to our plans for future developments and procedures so far as it is possible to anticipate industrial or manufacturing performance in the years ahead.

Recruitment of technical personnel is very little easier now than it was during the war. The reopening of our Apprentice School will eventually give the Office an additional number of qualified craftsmen, but its effect will not be felt for three or more years.

In appropriation hearings, a few department officials have voiced opinions regarding the high cost of printing at the Government Printing Office. Careful study of the criticisms has been made. It is believed that the difficulty experienced by the departments in securing sufficient money for public printing and binding and the allocation of separate funds for printing and for duplicating are the real causes of

the criticisms. A clarification of definitions is highly desirable. In order to establish better control over public funds expended for printing and binding and for duplicating, the limitations should be removed from future appropriation acts and all such funds consolidated. Studies being made by this Office and by the Bureau of the Budget are expected to lead to appropriate recommendations.

Effective July 1, 1946, Treasury Department duplicating and distribution plants located in 15 cities throughout the United States were transferred to the Government Printing Office by direction of the Bureau of the Budget.

This decision to place operation of the plants under the supervision and direction of this Office was reached after a thorough study of management, operation, and need for the service. Concurrent with this study, conducted by the Bureau of the Budget, there was a series of discussions among representatives of that Bureau, the Procurement Division of the Treasury, and the Government Printing Office. On March 19, 1946, the Director of the Bureau of the Budget asked for my position in regard to transfer of the plants. On March 21, I agreed to undertake their operation. The record of the first year will be found in the section devoted to our Field Service Division (p. 189).

As the result of another survey in November 1946 by a representative of the Bureau of the Budget and an official of the Government Printing Office, the State Department printing plant, located in this city, was transferred to the Government Printing Office, effective February 1, 1947. The conditions and reasons for the transfer are also set out in the section of this report just cited.

During the fiscal year arrangements were made to take over the printing of advance decisions for the Supreme Court. This work had been produced under commercial contract for many years. When the contracting firm was dissolved, the Court asked this Office to assume production, and I directed that it be done. The circumstances leading to establishment of the Unit and the story of its initial accomplishments will be found on pages 177-179.

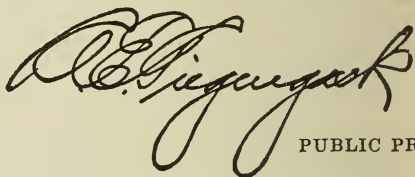
A number of important changes in the functioning of our Medical Section subsequent to July 1, 1947, are authorized by the provisions of Public Law 658, Seventy-ninth Congress. These will be made after consultation with the United States Public Health Service. Newly prescribed standards for the Section involve a larger library, an increased staff of nurses trained in public-health methods, more extensive record keeping, and changes in employee-relation procedures—in job placement, sick leave, and leave without pay. All this represents a considerable addition to the duties and responsibilities

of this Section and the Personnel Division, of which it is a part.

The research program, described on pages 37-40, is progressing very satisfactorily. Six reports were printed and, on September 22, 1947, presented to the national convention of Printing Industry of America, Inc.

I am particularly pleased with the improved procedures that have enabled the Public Documents Division not only to handle its increased activity on a self-sustaining basis but also to offset the cost of all non-revenue-producing functions.

During the year the Office has met congressional and departmental requirements more successfully than at any other time in the past. There have been relatively few complaints about our service, and the production divisions are to be congratulated for doing their work so well under many difficulties. I wish also to express my thanks to Members of Congress and to department and agency representatives for their cooperation in making our accomplishments possible.

A handwritten signature in dark ink, appearing to read "C. E. Figueras". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

PUBLIC PRINTER.

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Administrative Officials

OF THE GOVERNMENT PRINTING OFFICE

A. E. Giegengack, Public Printer

John J. Deviny, Deputy Public Printer

Russell H. Herrell, Executive Officer

LOXLIE V. ADAMS
Superintendent of Presswork

WILLARD A. ANDERSON
Mechanical Superintendent

IRVING L. BERMAN, M. D.
Medical Director

JAMES W. BRODERICK
Assistant Production Manager

WILLIAM J. CASSIDAY
Director of Purchases

PHILIP L. COLE
Planning Manager

FELIX E. CRISTOFANE
Comptroller

FRED W. CROMWELL
Superintendent of Documents

HARRY FALK
Superintendent of Library Branch

MAYBELLE G. FICKEL
Liaison Officer

ALFRED L. FLEMING
Night Production Manager

EMMET I. HILL
Director of Commercial Planning

S. PRESTON HIPSLEY
Director of Personnel

MORRIS S. KANTROWITZ
Technical Director

RAYMOND H. LECRAW
Consultant on Methods and Procedures

THOMAS G. MALONEY
Superintendent of Binding

JOHN A. McLEAN
Superintendent of Platemaking

JULIAN H. McWHORTER
Field Service Manager

HARRY D. MEROLD
Director of Planning Service

PHILIP C. MIXSELL
Director of Field Service Operations

FRANK H. MORTIMER
Director of Typography and Design

J. BASIL PERKINS
Disbursing Officer

MORRIS H. REAVES
Superintendent of Composition

WILLIAM SMITH
Production Manager

GROVER W. TRIBBLE
Director of Plant Planning

HENRY H. WRIGHT
Chief Clerk

PART I

Administrative

PAPER

REQUIREMENTS AND PROCUREMENT PROBLEMS

DURING the war the procurement of paper was fraught with many difficulties. These difficulties are still with us in the postwar period. The Government Printing Office can no longer count on the assistance of the War Production Board or the Civilian Production Administration for the orders or directives with which suppliers were required to comply. The Office is left to its own resources in securing the large amount of paper needed. These annual requirements approximate 180,000,000 pounds, in many grades, weights, sizes, and varieties.

The urgent nature of most public printing and binding during the emergency that still exists makes it imperative that the Office maintain adequate inventories, particularly in view of paper-market conditions. These inventories have often been dangerously low in recent years. For example, the supply of newsprint used in the publication of the Congressional Record reached a point at the close of the first session of the Eightieth Congress of only enough on hand for 2 days' issue. Had the Congress continued in session, it would have been necessary to resort to costly substitution—that is, if the Record were to be published.

When special paper requirements call for manufacture of stocks by the mills, a minimum of 60 days is needed to fill the order. In many instances, it is impossible to secure mill supplies under 120 days. Since

the departments are rarely able to anticipate large publications so far in advance, we must keep stocks on hand which can be used for most classes of work.

Our Planning Divisions have taken every possible step to simplify and reduce the requirements for paper. The first of these is substitution of a stock other than that specified by a department when an agreement can be reached. Throughout the emergency, weight standards have been lowered and the departments have been asked or required to accept lighter weights. Many jobs are redesigned to permit more economical utilization of paper. When possible, margins are reduced, smaller type sizes are used, and linecuts are substituted for halftones to permit use of coarser-finish stock. The departments have been asked to reedit material so that extra pages would not be required. The same methods are being resorted to in order that we may continue to supply the Government's printing requirements when normal supplies of paper are not available.

The total inventory of all kinds of paper on hand in the Government Printing Office on June 30, 1947, amounted to 61,175,496 pounds, which represents approximately 100 days' supply. However, this is only a part of the picture. There is a critical deficiency, or no stock whatever, in many qualities and grades in common demand.

The quarterly opening of bids for the period beginning July 1, 1947, by the Joint Committee on Printing yielded only 51-percent coverage. Out of requirements for 20,040,000 pounds, only 10,235,000 pounds were received. Failure to bid on newsprint, book, and chemical wood paper accounted for the major part of the shortage. On some items in these most commonly used grades no coverage was secured. The difference must be obtained through open-market purchases. The question may be asked: Why do suppliers who refuse to bid on regular requirements sometimes quote in the open market? The answer lies in the specifications. The Office desires to maintain as far as possible its standard specifications to secure the grades and qualities which have been established over a period of years. On the other hand, contractors frequently wish to furnish grades which may be either lower or higher than our specifications, depending on the availability of raw materials.

The present-day market and manufacturing conditions are responsible for the difficulties that are being encountered. The demand for paper at this time is unprecedented. As a nation's economy returns to normal channels, there is an ever-growing commercial demand for all grades of paper. Advertising is flourishing. Publishers are enjoying such a boom as they have never before experienced. Many new uses have been discovered for pulp and paper, and the requirements of those who are converting it into new products place hitherto unknown

demands on the pulp mills. Furthermore, a number of large mills, former suppliers to the Office, have been bought by publishing or converting interests, and their output is no longer available.

Under these conditions, operators naturally desire to run their mills on the fullest possible schedule with the materials available. There is now a market for any kind of paper that can be manufactured. Consequently, the type of paper being made is dependent almost entirely on the kind of raw materials on hand. This explains why we are unable to demand compliance with rigid specifications and why it is difficult to secure bids under almost any conditions.

When the mills, yielding to whatever persuasion or pressure can legally be applied, finally agree to furnish a part of the paper required, they invariably insist that the only paper they will undertake to furnish is the kind they happen to be manufacturing at the time the order is placed. To protect the Government and comply with procurement regulations, we have adopted the following procedure:

1. After regular openings of bids at the Joint Committee on Printing, if insufficient coverage is secured, bidders are asked to quote on exact specifications for additional quantities, and awards are made by our Purchasing Division to the low bidders, if any.

2. When no bid or insufficient coverage on these additional quantities of paper results, appeals are made by telephone, telegraph, or letter. Usually, through this more direct contact, we are able to secure agreement to manufacture all or part of the quantity of paper required. Our practice then is to secure confirmation of the offer and send out bid invitations based on the specifications, as offered, to all bidders originally invited.

3. If all paper needed cannot be secured on the specifications as advertised, the specifications are then changed to provide a paper which will meet the purpose, even though it is not as satisfactory as that originally specified. At the time the specifications are changed, the complete bidding procedure is repeated.

4. Orders are given in all instances to the lowest qualified bidder or bidders up to the maximum amount needed.

It is recognized that the quality of paper thus secured, even though acceptable, is not usually up to Government standards. The price often is higher than normal. There is a recent example of the high price that the Government is required to pay when the demand so far outruns the supply. On June 9, 1947, we invited 58 suppliers to quote on 4,245 tons of chemical wood writing paper which was needed for current work. The normal current price is approximately 12 cents a pound. Five bids were received. Four of these five bids covered a total tonnage of 450,000 pounds, or 5.25 percent of what was needed, at the normal

market price, and the fifth bid was received from a mill which would take the entire requirement at a price of 17 and 17½ cents a pound, depending upon the weight of the paper. Orders were placed for the 450,000 pounds of paper offered at the normal market price and for only 2,000,000 pounds of the quantity offered by the fifth bidder at the higher price.

This paper is a general-use stock. We also have great difficulty in securing specialty papers, particularly United States money-order safety writing paper. The demand of the Post Office Department for money-order forms has been exceedingly heavy; and as the type of paper on which the forms are printed is manufactured by very few firms, it was with great difficulty that we secured sufficient stock. Several times presses had to be shut down or run on reduced shifts. The design of the present money-order paper has been in use for many years. In order to enlarge the field of manufacturers from whom paper of this type can be secured, an investigation is being conducted to determine whether paper of this character can be made through processes other than the one now followed.

Surplus paper secured from the departments or from the War Assets Administration was a major factor in keeping supplies at a point permitting the Office to maintain its service as well as it did. The surplus stock was used principally to fill orders for blank paper and thus reduce the need to cut prime stock. It was not generally suitable for production of the usual run of orders on Government Printing Office equipment in that it consisted largely of cut stock, a great proportion of it being ground-wood mimeograph.

By the foregoing methods we have succeeded in supplying the Government's printing needs during the fiscal year 1947 in a fairly satisfactory manner. The percentages of coverage on the regular paper schedule for the quarterly periods of the year were: July 1, 1946, 47 percent; October 1, 1946, 34 percent; January 1, 1947, 54 percent; April 1, 1947, 40 percent. The difference was made up in the open market by accepting stock under less rigid specifications.

Economists can foresee no softening of demand. The output of marginal mills is still commanding premium prices. One of the country's foremost mills states unqualifiedly that allocations will continue throughout 1947. Allocations mean that buyers will continue to pay bonuses for paper of dubious quality and that suppliers will be reluctant bidders on Government specifications.

We are still on a hand-to-mouth basis. We advertise and readvertise our needs. We are forced to resort to pleading with suppliers. We are forced to accept less than we need in quantity and quality. With cooperation and management, it is probable that 1948 requirements can be

met, but it is believed that definite steps should be taken by the Government to provide a means of securing paper for its needs without the constant effort and confusion which has characterized the recent years.

This problem is far from new. Even during the Revolutionary War men had to be released from the Army to work in paper mills so that the Continental Congress could secure paper stocks needed in the prosecution of the war.

In 1916, the House Committee on Printing of the Sixty-fourth Congress reported favorably on a bill (H. R. 17699) authorizing the Public Printer to erect or purchase a pulp-and-paper mill. The committee's expressed purpose was to provide "necessary paper for Government printing and binding at all times at a fair price" and to protect the Government from suppliers who "refuse to furnish necessary paper for the operations of the Government except at exorbitant and noncompetitive prices." The bill contemplated use of wood, minerals, and other materials found on public lands and proposed cooperation of the Departments of Agriculture, Commerce, and Interior with the Public Printer. The committee's report went on to cite other intolerable conditions in the procurement of paper that almost exactly parallel those of today.

During the past several years the Public Printer has had a large number of conferences and meetings with representatives of mills and dealers in an attempt to secure a greater measure of cooperation. The results to date have been negligible.

At the second quarterly opening of bids for the fiscal year 1947, the then chairman of the Joint Committee on Printing reopened the question of operating mills under Government ownership. His statement is here quoted in part:

In its efforts to secure paper for the printing required to carry on its functions, the United States Government is confronted with the most serious and critical situation of all time. You, ladies and gentlemen, who represent mills and dealers, do not have to be told how essential paper is to any business or how serious it is when the biggest printing business in the world must contend with shortages.

The Public Printer, who is accountable to the Joint Congressional Committee, of which I am the chairman, has kept me advised of his difficulties. I know of his repeated appeals to the paper industry. I know how he has begged and cajoled mills and dealers to let him have a reasonable percentage of the output that under different conditions of business you were so anxious to sell him. I know, through him, that your industry has shortages, strikes, price ceilings, high export prices, duties on imports of pulp, a large commercial demand, diversion to new uses, and many other conditions that may be advanced to explain our present inability to get paper. But the fact remains that paper is being made at the present time in quantities that exceed prewar manufacture, and it is intolerable that the Federal Government should have to beg for paper and then not get it.

The Public Printer states that the paper industry, under its able leadership and with the guidance and cooperation of the War Production Board, did a wonderful job for the Government Printing Office during the war, as the majority of the mills correctly considered it their patriotic duty to furnish paper to the Government as their contribution to the war effort; but in some manner they now seem to be under the erroneous opinion that the Government does not need a large quantity of paper. The demands now being made upon the Government Printing Office are far in excess of prewar requirements. This is illustrated by the fact that for the last quarter of 1946 the Public Printer estimated that he would need 40,000,000 pounds of paper to meet actual known demands that will be made upon him during that period, as compared with 21,500,000 pounds required for the last quarter of 1939.

The importance of these jobs to the functioning of the Government and to the individual citizen is shown by only a few illustrations out of the thousands regularly required to be produced:

Application forms for terminal-leave pay to be distributed to the post offices throughout the United States require 30,475,000 copies, 446,000 pounds of paper.

The income-tax forms for the year 1946 and the estimated return forms for 1947 call for the printing of 665,705,000 blanks of various sizes, and will require 5,620,550 pounds, or 140 carloads of paper.

Hearings on Pearl Harbor, 39 large volumes, required 500,000 pounds of paper.

The Veterans' Administration requires millions of forms. Its various activities in the months of May, June, and July took approximately 4,418,000 pounds of paper. They are all rush, because by the time the copy is prepared the public and the press are demanding action from the Administration.

Department of Agriculture Yearbook, 247,376 copies, 910,000 pounds of book paper.

I will tell you frankly that as Chairman of the Joint Committee on Printing, under the authority vested in that committee by section 4, title 44, of the United States Code, I am prepared to back up the Public Printer's recommendations whatever they are—even to the extent of putting the Government in the paper-manufacturing business. The law specifically provides that—

"The Joint Committee on Printing shall have power to adopt and employ such measures as, in its discretion, may be deemed necessary to remedy any neglect, delay, duplication, or waste in the public printing and binding and the distribution of Government publications."

The Federal Government cannot, and will not, continue to endure the present situation. The Government is going to have paper. But what courses are open to it?

The Public Printer, mindful of the responsibility vested in him by law and by the regulations of the Joint Committee on Printing, has discussed with me the possibility of establishing Government paper mills. If he has to come to the Joint Committee on Printing and say that all other legal methods of securing paper have failed, then that committee will have no alternative but to ask Congress to give him the means of doing his job.

The Office, at the direction of the Joint Committee on Printing, wrote to approximately 100 mills asking whether they would consider selling their property to the Government. About 30 replied. Only three expressed a willingness to negotiate; the remainder were not interested.

The matter is now referred to Congress. Obviously, the Joint Committee on Printing and the Government Printing Office should not

have to continue the present highly unsatisfactory methods of paper procurement, with their threat to production of necessary Government publications. It is recommended that Congress give serious consideration to the development of long-range measures to provide unfailing sources of paper supplies.

INCREASED STORAGE FACILITIES NEEDED

Our present plant and storage-space facilities, planned in 1934 to allow a reasonable margin for expected normal expansion, were occupied in 1940. The war period, which followed almost immediately, made these facilities, particularly storage space, inadequate. It was impossible to find additional space for lease in the District of Columbia, forcing the acquisition of rental space in Baltimore, Md., and Alexandria, Va. Furthermore, space had to be taken in New York, Chicago, San Francisco, Dallas, and Atlanta to service our printing contractors operating at those points. With the close of the war, the five last-mentioned warehouses were closed.

During the recent emergency we sought storage relief from the Public Buildings Administration. We repeatedly asked for use of one of the War Department warehouses at Cameron, Va. It is ideal for the purpose of paper storage, having unlimited floor-load capacity, railroad sidings, and floors at truck- and railroad-platform levels. We met with no success. The space is now assigned to another agency for storage of files.

The following table shows the present use of our own and commercial storage space and the rental paid:

	Maximum capacity	Present inventory	Rental charges fiscal year 1947
Government owned: GPO buildings 2, 3, and 4.....	<i>Lb. gross</i> 18, 000, 000	<i>Lb. gross</i> 13, 004, 139	-----
Rented space:			
Terminal Warehouse, Washington, D. C.....	6, 250, 000	5, 250, 000	\$22, 200. 00
Baltimore Warehouse, Baltimore, Md.....	2, 625, 000	2, 625, 000	5, 592. 00
Public storage:		<i>Lb. net</i>	
John F. Rowley Transportation Co., Baltimore, Md.....	(¹)	25, 696, 538	267, 460. 58
Robinson Terminal Warehouse Corp., Alexandria, Va.....	(¹)	16, 582, 675	163, 010. 86

¹ Unknown; rented on basis of rate per 100 pounds of paper stored, including handling and trucking charges.

The Public Buildings Administration has agreed to furnish an estimate for submission to Congress for increased paper-storage space

described as project B in the Office's long-range plans for modernization. (See p. 222.) It provides for the acquisition and removal of present buildings adjacent to building 4; and the enlargement of the warehouse, building 4, to extend along G Street NE., from North Capitol Street, a distance of 365 feet 9 inches. This should be a reinforced-concrete building 87 feet 6 inches wide, containing three stories and basement and matching the present warehouse in architecture. It should have four freight elevators and a shipping platform to accommodate the largest commercial trailer vans.

The total sum paid for space and storage, with handling and trucking service furnished by public storage warehouses, during the fiscal year 1947 is \$458,263.44. If the present need continues—and there is ample evidence that Government printing and binding requirements may be expected to remain at or about 1947 levels—there is an obvious need for expanded Government-owned storage space. Construction of an adequate addition to the warehouse, building 4, could be liquidated in 5 or 6 years by the application of present rental charges.

It is recommended that the Congress give consideration to our need for additional paper-storage space, and the project just outlined is submitted as meeting requirements.

SURVEY OF FIELD PRINTING AND DUPLICATING

During the war years, and even prior thereto, the Public Printer watched with concern the great expansion of the Government's field printing and duplicating plants. Yet both classes of plants had grown up in response to a recognized need.

The definition of "field printing," as laid down in section 111, title 44, of the United States Code, is open to various interpretations. Departments maintaining authorized field plants interpreted it in accordance with action they desired to take. Frequently, when the Public Printer sought to apply restrictions on format, style, or materials to be used in public printing and binding, under authority of section 158, title 44, of the United States Code, the ordering agency simply withdrew the work and placed it in a field plant. Field plants competed with the Government Printing Office for hard-to-get paper, and sometimes, armed with higher priority, took possession of paper intended for a critical job on which the very same department was pressing us for delivery. There was similar competition between this Office and field plants for commercial facilities. This resulted in two entirely separate printing organizations under different controls but with overlapping areas of activity.

Duplicating plants, ostensibly engaged only in producing limited

numbers of copies requiring no binding equipment, other than simple stapling machines, were known to be turning out large-quantity jobs that could not be produced economically by duplicating methods. To some extent they overcame the economy factor by installing larger and faster equipment. The question of control crops up at almost every point where the operation of such plants infringes on public printing and binding. We have been forced many times into the uneconomical and unsatisfactory production of publications either because an agency had originally prepared its copy for multilithing or desired to hold reproducibles for future processing in its duplicating plant.

Since duplicating and field printing plants are located in or near commercial printing centers in practically all 48 States, private enterprise regards them as providing improper competition for business as well as for hard-to-get equipment and materials. Actually, it was the equipment shortage that led to organized protest on the part of commercial printers.

On December 13, 1945, Printing Industry of America, Inc., representing more than 2,000 members, protested in a letter to the chairman of the Joint Committee on Printing. It expressed concern over the use of Government printing equipment in competition with private industry.

Owing to conditions resulting from the war, relatively little printing and binding equipment had been manufactured over a period of several years. Replacements for outmoded or worn-out machinery and parts were virtually unobtainable, and the outlook for the immediate future was not promising. Undoubtedly, the Government had absorbed a large amount of printing and binding machinery. The Printing Industry of America, Inc., on behalf of its members, desired that such equipment be made available to them. Many of these plants, which were established as a wartime measure, were taking no steps to declare equipment surplus to their requirements. In some instances, work for other Government agencies was being produced in order to justify continued operation. Printing Industry of America, Inc., asked for an inventory so that coordination and a greater measure of control could be established.

EARLIER SURVEYS

Two previous surveys of printing and duplicating activities have been conducted by the Joint Committee on Printing—in 1920 and in 1937. Neither of these surveys provided for a uniform system of reporting the desired information. Voluminous statistical data were gathered

and printed, but were not suitable for proper analysis. Also, in 1937, inventories were taken of all equipment located in field printing plants authorized by the Joint Committee on Printing.

In a report dated July 20, 1942, a subcommittee of the Senate Committee on Appropriations cited many instances of departments and agencies of the Federal Government with unnecessarily large amounts of photographic and duplicating equipment. To quote the report: "The conditions found to exist * * * warrant that further study and consideration be given to the establishment of central duplicating offices * * * available to service all Government agencies within a particular area." Few, if any, changes were made as a result of these surveys, reports, and recommendations.

1946 SURVEY

On February 1, 1946, the Public Printer wrote to the chairman of the Joint Committee on Printing urging a survey of the entire situation and recommending that necessary steps be taken to maintain effective controls over field printing plants and departmental reproduction units. He further recommended that the Joint Committee on Printing ask that a representative of the Bureau of the Budget be designated to work with Government Printing Office representatives in the preparation of instructions and questionnaires to be sent to all Government departments and agencies.

The Joint Committee on Printing acted favorably. The Bureau of the Budget agreed to assist in conducting the survey, in analyzing the reports, and in making recommendations for corrective steps indicated by the survey. Its Director appointed Edward B. Wilber and George S. Vanderwende of the Administrative Management Division, to represent him in planning and conducting the survey. The Public Printer designated our Field Service Manager as his representative. The Field Service Manager's office staff performed the required clerical work.

Numerous discussions were held in connection with the development of appropriate reporting forms. The Budget Bureau representatives wanted the opinions of executive-branch agencies in order that the administrative heads could assist in directing the reporting. Finally, a meeting of the top administrative heads of all major Government departments and agencies in the executive branch was arranged by the Bureau of the Budget and the proposed report forms were presented to them for consideration. Their recommendations were incorporated into the forms. Then Budget Bureau Bulletin 1946-47: 11 was issued on September 20, 1946, directing the departments and agencies of the executive branch of the Government to supply the requested data.

The report forms were issued in four parts, as follows:

Part I—Report of Each Individual Printing and Duplicating Plant (9 pages).

Part I-A—Individual Report of Office-Type Duplicating Machine Installations (1 page).

Part II—Individual Report of Printing, Duplicating, and Related Auxiliary Equipment, Stored Elsewhere Than in Printing and Duplicating Plants (1 page).

Part III—Summary Report of Printing and Duplicating Plants (1 page). This report furnished to each bureau, agency, or division a complete summarization of its entire printing and duplicating activities and disclosed many instances in which economy of operation and cost could be effected by elimination or consolidation.

The large volume of printing acquired from funds allocated to budget classifications other than printing and binding indicates need either for greater regulation and control of so-called duplicating plants or for possible amendment of existing printing laws.

Completed reports from all departments and establishments were received subsequent to February 15, 1947. Analysis of information reported revealed that 133 printing and 256 duplicating plants were in operation as of January 1, 1947, exclusive of the Government Printing Office, the Bureau of Engraving and Printing, and the 14 Government Printing Office Field Service plants. Equipment represents an investment of \$13,188,961.17 and the estimated 1947 fiscal year operating cost amounts to \$26,680,833.89, an increase over fiscal year 1946 of \$3,121,505.86.

Table I indicates the extent of Government printing and duplicating activity within each State. The District of Columbia has 52 duplicating and 9 printing plants. The largest of these duplicating plants in terms of cost of operation is in the War Department. This is followed by the Department of Commerce plant. The latter employs many copy-typing machines, such as varitype and IBM electromatic typewriters, to prepare copy for statistical reports containing much tabular material. Often this copy is furnished the Government Printing Office for reproduction by the offset-printing process. We now provide a similar service in our Washington Field Service plant for the convenience of those Government departments and agencies which do not maintain copy-typing units. When properly controlled and applied to suitable classes of work, economies result from this procedure. The largest departmental printing plant reported in the District of Columbia is operated by the Coast and Geodetic Survey, of the Department of Commerce, for the production of topographic maps.

TABLE I.—Summary of printing and duplicating activities, by States and for the District of Columbia

State	Printing plants			Duplicating plants			Operation costs—printing and duplicating plants			
	Number of plants	Number of employees	Equipment value	Number of plants	Number of employees	Equipment value	Fiscal year 1946	Fiscal year 1947 ¹	Increase	Decrease
Alabama.....	1	34	\$52,221.78	4	79	\$117,266.61	\$260,312.06	\$242,112.89	-----	\$18,199.17
Arizona.....	1	1	24,099.18	-----	-----	-----	5,588.60	6,186.00	\$597.40	-----
Arkansas.....	-----	-----	-----	1	11	22,944.33	69,500.00	59,200.00	-----	10,300.00
California.....	22	244	589,692.05	24	280	503,061.99	1,334,927.85	1,638,829.68	303,901.83	-----
Colorado.....	1	3	2,594.52	7	156	172,648.93	302,119.79	379,837.76	77,717.97	-----
Connecticut.....	-----	-----	-----	2	18	36,929.65	6,528.29	12,613.09	6,084.80	-----
Delaware.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
District of Columbia.....	9	847	1,313,356.22	52	2,197	2,655,734.75	10,589,704.78	11,939,197.68	1,349,492.90	-----
Florida.....	5	37	91,509.77	2	10	21,517.36	136,151.85	102,768.55	-----	33,383.30
Georgia.....	5	134	344,557.94	5	97	70,800.51	572,063.67	736,168.21	164,104.54	-----
Idaho.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Illinois.....	7	221	289,721.16	15	201	339,417.82	1,140,208.75	1,400,391.15	260,182.40	-----
Indiana.....	3	21	33,510.07	3	23	42,505.46	87,955.20	65,495.05	-----	22,460.15
Iowa.....	1	-----	898.94	-----	-----	-----	359.44	332.00	-----	27.44
Kansas.....	3	143	422,395.95	1	2	4,600.00	198,911.83	333,528.00	134,616.17	-----
Kentucky.....	2	53	106,198.35	3	29	45,535.19	150,459.18	205,887.30	55,428.12	-----
Louisiana.....	2	12	60,312.51	3	34	30,901.33	92,894.50	175,429.26	82,534.76	-----
Maine.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Maryland.....	3	31	85,681.27	7	56	156,792.64	287,966.05	278,874.92	-----	9,091.13
Massachusetts.....	3	29	51,037.52	5	25	107,421.93	164,462.85	174,889.22	10,426.37	-----
Michigan.....	1	4	4,862.77	4	51	112,320.43	188,867.03	234,624.14	45,757.11	-----
Minnesota.....	3	4	3,719.92	4	46	33,264.75	28,752.95	111,122.39	82,369.44	-----
Mississippi.....	1	8	24,536.70	1	10	30,491.75	90,006.97	70,202.00	-----	19,804.97
Missouri.....	6	116	327,622.21	7	103	81,156.04	621,744.94	852,536.18	230,791.24	-----
Montana.....	-----	-----	-----	1	2	13,550.33	-----	-----	-----	-----
Nebraska.....	2	3	17,312.08	2	26	22,685.48	32,407.01	27,095.40	-----	5,311.61
Nevada.....	-----	-----	-----	1	3	7,834.90	5,548.00	6,420.00	872.00	-----
New Hampshire.....	2	9	30,207.60	-----	-----	-----	31,609.54	17,731.60	-----	13,877.94
New Jersey.....	3	69	298,000.04	4	27	44,063.05	745,050.51	456,338.93	-----	288,711.58
New Mexico.....	-----	-----	-----	1	4	16,036.90	26,285.19	23,842.00	-----	2,443.19
New York.....	8	171	530,551.07	19	147	270,993.68	1,179,683.43	1,047,714.82	-----	131,968.61

North Carolina.....				39	23, 379. 70	29, 793. 57	39, 978. 63	10, 185. 06	-----
North Dakota.....									-----
Ohio.....	3	208	503, 667. 80	6	107, 875. 24	986, 172. 20	1, 294, 365. 35	308, 193. 15	-----
Oklahoma.....	3	80	170, 347. 72	3	126, 522. 25	267, 826. 56	305, 598. 60	37, 772. 04	-----
Oregon.....	2	6	11, 060. 50	4	76, 293. 76	228, 277. 53	316, 400. 35	88, 122. 82	-----
Pennsylvania.....	10	215	429, 572. 07	21	425, 534. 60	1, 634, 360. 86	1, 460, 219. 87	74, 130. 99	-----
Rhode Island.....				4	82, 369. 65	79, 751. 71	54, 412. 63	25, 339. 08	-----
South Carolina.....				14					-----
South Dakota.....	2	15	29, 094. 71	2	14, 903. 65	74, 799. 59	80, 713. 18	5, 913. 59	-----
Tennessee.....									-----
Texas.....	6	80	219, 769. 61	6	99, 715. 59	280, 788. 26	334, 175. 65	53, 387. 39	-----
Utah.....	2	48	122, 385. 56	8	146, 282. 02	488, 325. 29	590, 806. 24	102, 490. 95	-----
Vermont.....				1	8, 941. 83	147, 386. 85	211, 063. 64	63, 676. 79	-----
Virginia.....	6	245	512, 587. 41	11	170, 695. 99	654, 432. 88	690, 690. 65	336, 257. 77	-----
Washington.....	4	58	103, 355. 38	6	86, 738. 78	379, 096. 77	348, 598. 02	30, 498. 75	-----
West Virginia.....				1	10, 135. 10	24, 115. 94	21, 537. 69	2, 578. 25	-----
Wisconsin.....	1	1	2, 677. 35	2	14, 709. 47	30, 639. 76	30, 955. 17	315. 41	-----
Wyoming.....				1	25, 250. 00	3, 500. 00	1, 950. 00	1, 550. 00	-----
Total.....	133	3, 150	6, 809, 137. 73	256	6, 379, 823. 44	23, 559, 328. 03	26, 680, 833. 89	3, 811, 132. 02	689, 676. 16

¹ Estimated.

Table II summarizes printing and duplicating activities by departments and agencies. A total of 7,721 persons is employed in the 389 plants, with an estimated expenditure of \$26,680,833.89 for the fiscal year 1947. The War Department reported 41 printing and 100 duplicating plants, with an estimated total operating cost of \$6,902,655.92 in the same year. The Navy Department follows with 44 printing and 43 duplicating plants with an estimated operating cost of \$4,706,748. Estimated cost of operation for the fiscal year 1947, as reported by both Departments, represents a total decrease of \$739,302.68 from 1946. Many plants reported only part-time utilization of equipment.

Table III summarizes the activities in 30 areas of greatest concentration. Partial utilization of equipment in many plants in these areas reveals inadequate coordination. Also, sparse supplementary use of commercial facilities further indicates that the size of some individual plants may be larger than required.

After the consideration of all factors reported, the following analysis and recommendations were made part of the report and transmitted to the chairman of the Joint Committee on Printing on May 15, 1947:

The facts revealed by the following analysis should not be used as a basis for any immediate administrative action, since the validity of the operations of these facilities by the reporting agencies must be determined by an individual study of each agency's operations and needs, which neither this survey nor any general type of questionnaire could adequately provide.

The rapid growth of small offset duplicating plants as a means of circumventing the printing law has obviously resulted from lack of appropriate regulatory measures. The existing definition of "printing" is subject to much misinterpretation and is, therefore, believed to be inadequate. Since printing is actually a manufacturing process, which can be performed on either large or small machines, it is therefore believed essential to eliminate any distinction between the product of what is now known as "printing" or "duplicating" equipment if effective control is to be achieved and economy of production is to result.

The locations of "field printing plants" throughout the country and their proximity to "duplicating plants" (together with the numbers of both found in many areas) pointedly indicate the need for considering both as one problem. The following recommendations are based on this premise, and depart from present practice so as to permit latitude and exercise of judgment on the facts as they are developed, and to treat the problem in its entirety rather than separating it into two classes with divided responsibility.

The following recommendations are presented in order that a uniform approach can be made to obtain the greatest benefits from the facts as they are revealed in the analyses:

1. That as a continuing program, representatives designated by the GPO and the Bureau of the Budget be authorized and directed by the Joint Committee on Printing to inspect those printing and duplicating plants located in concentrated areas, and such other plants as may be necessary, to determine whether the plants meet program requirements and other practical considerations looking toward greater utilization of equipment, personnel, and space by consolidation, reduction,

TABLE II.—Summary of printing and duplicating activities by establishments

Establishment	Printing plants			Duplicating plants			Operation costs—printing and duplicating plants			
	Number of plants	Number of employees	Equipment value	Number of plants	Number of employees	Equipment value	Fiscal year 1946	Fiscal year 1947 ¹	Increase	Decrease
National Advisory Committee for Aeronautics.....	1	---	\$3,970.40	3	100	\$94,171.45	\$240,410.80	\$369,425.69	\$129,014.89	---
Agriculture Department.....	1	4	11,242.80	11	203	212,423.71	699,654.96	777,695.51	78,040.55	---
Atomic Energy Commission.....	---	---	---	1	22	19,258.18	65,102.72	78,566.00	13,403.28	---
Civil Service Commission.....	---	---	---	1	43	63,929.41	139,407.76	132,215.62	---	\$7,192.14
Commerce Department.....	23	334	499,446.26	3	239	188,739.59	1,847,022.60	2,624,529.65	777,507.05	---
Executive Office of President.....	---	---	---	1	5	6,684.95	16,590.57	17,848.00	1,257.43	---
Federal Communications Commission.....	---	---	---	1	35	33,894.08	83,281.89	102,965.00	19,683.11	---
Federal Deposit Insurance Corporation.....	---	---	---	1	8	17,789.50	37,016.94	39,895.00	2,878.06	---
Federal Power Commission.....	---	---	---	1	22	43,874.46	53,186.00	74,616.00	21,430.00	---
Federal Security Agency.....	---	---	---	1	40	60,701.69	102,265.72	116,560.02	14,294.30	---
Federal Trade Commission.....	---	---	---	1	9	47,223.33	23,639.00	22,034.00	---	1,605.00
Federal Works Agency.....	---	---	---	1	90	61,972.04	231,173.00	303,889.00	72,716.00	---
General Accounting Office.....	---	---	---	1	27	23,085.48	92,057.65	82,809.00	---	9,248.65
Interior Department.....	3	120	240,686.98	12	219	245,877.29	911,157.77	1,099,959.09	188,801.32	---
Interstate Commerce Commission.....	---	---	---	1	19	28,801.46	55,305.22	67,742.00	12,436.78	---
Justice Department.....	3	64	106,926.00	4	72	109,942.19	388,641.06	380,972.08	---	7,668.38
Labor Department.....	---	---	---	2	55	98,709.32	346,800.35	300,915.35	---	45,885.00
Library of Congress.....	---	---	---	1	9	6,374.61	34,031.61	49,243.46	15,211.85	---
National Archives.....	---	---	---	1	6	13,003.05	16,372.00	16,479.00	107.00	---
National Labor Relations Board.....	---	---	---	1	15	13,699.20	48,272.00	41,499.00	---	6,773.00
National Housing Agency.....	---	---	---	4	128	131,022.94	500,297.35	577,811.15	77,513.80	55,703.14
Navy Department.....	44	978	1,984,932.71	43	563	1,038,216.14	4,762,451.14	4,706,748.00	---	---
Post Office Department.....	14	125	104,662.00	1	13	23,572.77	476,739.23	517,317.40	40,578.17	---
Railroad Retirement Board.....	---	---	---	1	31	41,417.55	85,164.43	144,250.00	59,085.57	---
Securities and Exchange Commission.....	---	---	---	1	39	91,460.46	102,348.44	148,720.00	46,371.56	---
State Department.....	2	180	214,491.00	1	22	13,420.00	576,415.02	841,378.44	264,963.42	---
Tennessee Valley Authority.....	---	---	---	2	46	44,127.53	168,338.00	196,317.00	27,979.00	---
Tariff Commission.....	---	---	---	1	11	20,514.56	25,754.00	28,243.00	2,489.00	---
Treasury Department.....	---	---	---	15	226	341,632.85	574,535.65	626,030.04	51,494.39	---
Veterans' Administration.....	1	9	10,576.00	16	475	270,457.22	184,025.87	1,873,679.14	1,689,653.27	---
War Assets Administration.....	---	---	---	22	466	343,467.76	1,085,553.82	1,417,824.73	332,270.91	---
War Department.....	41	1,336	3,572,203.58	100	1,313	2,630,463.57	9,586,255.46	8,902,655.92	---	683,599.54
Total.....	133	3,150	6,809,137.73	256	4,571	6,379,823.44	23,559,328.03	26,680,833.89	3,939,180.71	817,674.85

¹ Estimated.

TABLE III.—Summary of printing and duplicating activities in areas of concentration¹

Area of concentration	Printing plants			Duplicating plants			Operation costs—printing and duplicating plants			
	Number of plants	Number of employees	Equipment value	Number of plants	Number of employees	Equipment value	Fiscal year 1946	Fiscal year 1947 (estimated)	Increase	Decrease
Seattle, Wash.	1	4	\$13,612.19		5	\$76,119.39	\$197,100.49	\$159,798.42	---	\$37,301.07
Portland, Oreg.	2	6	11,060.50		4	76,293.76	223,277.53	316,400.35	\$88,122.82	---
San Francisco, Calif.	11	153	277,739.08		12	256,737.67	686,883.04	870,961.43	184,078.39	---
San Angeles, Calif.	6	44	114,636.55		6	95,877.53	338,878.16	330,962.82	---	7,915.34
San Diego, Calif.	4	38	107,435.42		1	15,004.23	21,000.00	119,032.56	98,032.56	---
Ogden, Utah.	2	48	122,385.56		1	8,941.83	147,386.85	211,063.64	63,676.79	---
Denver, Colo.	1	3	2,594.52		5	139,532.48	242,406.79	347,480.76	105,074.97	---
Dallas, Tex.	2	6	9,491.78		3	46,325.54	126,989.53	209,992.05	83,002.52	---
San Antonio, Tex.	2	48	119,497.77		2	44,107.28	209,061.96	212,868.36	3,806.40	---
Kansas City, Mo.	3	146	340,546.01		3	22,974.13	223,206.62	297,947.04	74,740.42	---
St. Paul, Minn.	3	4	3,719.92		4	33,264.75	28,752.95	111,122.39	82,369.44	---
Detroit, Mich.	1	4	4,862.77		4	44,403.28	119,118.87	136,899.14	17,780.27	---
Milwaukee, Wis.	1	1	2,677.35		1	6,047.21	12,610.49	10,253.40	---	2,357.09
Chicago, Ill.	3	100	136,371.95		13	158	726,835.16	1,001,853.13	275,017.97	---
St. Louis, Mo.	5	122	322,299.69		5	67,741.26	550,063.58	798,117.14	248,053.56	---
Louisville, Ky.	2	53	106,198.35		2	26,638.64	124,603.53	193,737.30	69,133.77	---
Indianapolis, Ind.	3	21	33,510.07		1	23,738.26	51,366.96	37,978.89	---	13,388.07
Atlanta, Ga.	3	31	69,283.26		4	56,996.23	296,302.43	452,134.48	155,832.05	---
Cleveland, Ohio.	1	3	1,940.97		4	77,493.04	387,787.50	531,802.38	144,014.88	---
Jacksonville, Fla.	3	20	32,623.83		1	14,784.78	80,750.20	70,884.75	---	9,865.45
Washington, D. C.	9	847	1,313,356.22		52	2,655,734.75	10,589,704.78	11,939,197.68	1,349,492.90	---
New Orleans, La.	2	12	60,312.51		1	5,967.63	16,268.17	98,299.40	82,031.23	---
Baltimore, Md.	2	6	17,044.42		5	93,861.14	101,896.09	145,780.74	43,884.65	---
Boston, Mass.	3	29	51,087.52		3	81,242.38	153,288.94	165,689.22	12,400.28	---
Fort Monmouth, N. J.	3	69	298,000.04		4	44,240.05	745,050.51	456,338.93	---	288,711.58
New York, N. Y.	6	132	402,812.29		10	121,900.62	821,537.00	732,906.69	---	88,630.31
Philadelphia, Pa.	8	182	319,237.40		17	336,476.51	1,268,126.53	1,191,013.55	---	77,112.98

Newport, R. I.....	1	7,800.50	3	14	74,569.15	79,751.71	54,412.63	25,339.08
Richmond, Va.....			3	62	41,162.88	120,474.38	198,410.76	77,936.38
Norfolk, Va.....	3	68	6	90	104,256.76	238,311.29	454,386.62	216,075.33
Total.....	96	2,200	185	3,927	4,944,921.07	18,933,791.04	21,857,727.65	3,474,557.58
								550,620.97

1 Does not include the following Government Printing Office field service activities:

	Number of employees	Equipment value	Operating cost		
			Fiscal year 1946	Fiscal year 1947 (estimated)	Increase
Boston, Mass.....	53	\$43,525.80	\$125,169.71	\$221,169.09	\$95,999.38
New York, N. Y.....	49	31,398.54	130,406.68	216,727.94	86,321.26
Philadelphia, Pa.....	17	14,970.56	47,879.98	62,724.02	14,844.04
Washington, D. O.....	342	240,002.40	1,118,321.92	1,302,277.14	183,955.22
Cleveland, Ohio.....	30	23,485.08	87,067.35	136,505.64	49,438.29
Cincinnati, Ohio.....	68	23,821.28	152,781.14	203,169.65	50,388.51
Chicago, Ill.....	57	41,877.08	164,701.32	192,760.53	28,059.21
Atlanta, Ga.....	36	40,873.49	132,253.18	133,825.35	1,572.17
Dallas, Tex.....	42	33,356.74	99,985.16	161,807.03	61,821.87
Kansas City, Mo.....	75	45,482.71	161,860.51	260,919.48	99,058.97
Denver, Colo.....	63	32,450.05	162,745.22	243,246.24	80,501.02
San Francisco, Calif.....	68	35,123.88	137,649.20	247,039.79	59,390.59
Los Angeles, Calif.....	28	8,181.22	72,031.81	137,043.59	65,011.78
Seattle, Wash.....	53	32,839.41	133,027.09	231,387.05	98,359.96
Total.....	981	647,388.24	2,775,880.27	3,750,602.54	974,722.27

improvement of equipment, or elimination of plant or equipment. The following factors should be considered when recommendations are made concerning actions to be taken in each instance as they effect any changes:

a. Department or agency operations with special emphasis on timeliness of service.

b. Cost of operations.

c. Equipment requirements.

d. Budgetary or appropriations arrangements.

2. That any recommendations for changes in operations, consolidations, etc., made by the GPO and the Bureau of the Budget be jointly reported to the Joint Committee on Printing together with such recommendations as may require action by the Joint Committee on Printing in accordance with United States Code (title 44, sec. 4).

3. That agency-operated plants be equipped and staffed up to an economic level, and that all excess work over the established level be procured from other facilities, such as commercial sources, GPO Field Service offices, or from other agency plants when conditions warrant.

4. That the Joint Committee on Printing refer all requests for the establishment of all new printing or duplicating plants or major changes in existing plants to the GPO and the Bureau of the Budget for comment and recommendation.

5. That appropriate regulations be issued by the Joint Committee on Printing which will require all printing and duplicating plants to be approved by the Joint Committee on Printing excluding office-type duplicating machines which:

a. Utilize stencils, masters, or direct-image plates prepared by typewriter or other office device capable of typing or producing typing.

b. Produce no more copies of any one document than can be obtained from any one stencil, master, or direct-image plate, or any one set of same at one or more than one successive machine run.

c. Require no binding or finishing operations in connection with the product thereof other than those which can be performed with common hand-operated office-type stapling or punching machines.

6. That such annual and additional reports as may be required by the Joint Committee on Printing be submitted by all printing and duplicating plants in order that current conditions may be analyzed and appropriate recommendations formulated.

7. That the GPO and the Bureau of the Budget submit to the Joint Committee on Printing by June 1 each year recommended revisions to the regulations of the Joint Committee on Printing so that they may keep pace with technological improvements and varying conditions.

8. That the Joint Committee on Printing invite the attention of the heads of the various departments concerned to the existence of the apparently excessive quantities of stored equipment and request that careful consideration be given to the fulfillment of their actual requirements and that the remainder be declared surplus to their needs in accordance with United States Code (title 44, sec. 59).

Since the close of the fiscal year under report and while this writing was still in progress, the Joint Committee on Printing adopted (July 24, 1947) a resolution providing that our Field Service Manager, another representative of the Government Printing Office, and a representative of the Bureau of the Budget make an inspection trip of the 30 areas of greatest concentration as enumerated in the report of the sur-

vey of Government field printing and duplicating plants. The inspectors are to present to the Joint Committee on Printing recommendations for consolidation and elimination and operational changes, based on first-hand observations supported by additional data gathered through the inspection. The resolution further provides that representatives of the Government Printing Office, Bureau of the Budget, and Joint Committee on Printing participate in a study leading to the revision and codification of the printing laws.

COST ACCOUNTING AND PRODUCTION CONTROL

Cost accounting in the Government Printing Office is an important administrative function. Through modern methods used to ascertain cost and to control production, each operation stands on its own feet. The system develops the facts needed by the Office to assure its functioning both as an economical business institution and a governmental service agency.

The Office operates upon a financial structure which is comparable to, but more exacting than, that of private corporations. The Congress makes no appropriation to defray the cost of operation. All expenses must be recovered by charges as is the case in private firms, but with one essential difference: Surpluses accruing at the end of the year must be turned in to the United States Treasury.

The size and complexity of the Office, the largest complete printing plant in the world, now doing more than \$53,000,000 worth of business, having 6,972 employees as of June 30, 1947, operating several thousand machines, and handling hundreds of requisitions daily, necessitate a thorough and efficient accounting procedure. Every item of cost must be carefully checked to insure that the most economical methods, in accordance with the Government's need for superservice, are being followed.

Because of the great amount of detail and the speed and accuracy required in such a tremendous accounting operation, normal clerical forces must be supplemented by accounting machines. We employ the punched-card method—commonly known as the tabulating-machine system. By the use of a keyboard machine, perforations representing the figures or words contained in the source record are punched into cards. The cards are then put through electrical machines, which sort, multiply, add, or subtract, and print the results on prepared forms in any desired sequence. The total annual cost of the system, including machine rental and employee pay rolls, was \$390,000 for the fiscal year. A careful estimate of the cost of manual processing is approximately \$1,050,000.

Functions in the Office are broadly divided into two groups: Administrative and production. These groups are further separated into many subgroups—division, sections, and shifts—each representing a specific cost account. Each is designated by a symbol number. The different kinds of work performed in each production section have other symbols, called operation numbers. Variations in operations have been studied and classified, and are designated by class numbers. For example, in the Composing Division, the operation of “machine composition” may be further classified into “straight,” “technical,” and “tabular” matter, or the pressroom operation of “make-ready” may be classified into “type” and “halftone” forms.

Each division is furnished with a Schedule of Operations and Classes relating to the work it performs. The use of approximately 1,637 operation and class numbers expedites the reporting of time, production, and materials used, and helps to achieve accuracy in making out reports and records.

When an order is received, complete specifications for its production are prepared upon the face of an envelope or jacket, which is given a jacket number for ease in identification. From this point the jacket enters the production sections and work requiring accurate accounting is commenced.

In the congressional appropriation hearings for the current fiscal year, a number of agencies, notably the Federal Security Agency, in trying to justify need for funds to process an increased amount of printing, attempted to show that Office charges for work are too high. In order to find examples to sustain the argument, it was necessary for that Agency’s representative to go back 13 years, prior to establishment of the present cost system. He showed that he had then purchased commercially, for \$7.15 a thousand, pamphlets similar to those for which the Office charged \$10.68. All his other claims of high charges were disproved after investigation, but the 13-year-old discrepancy was just as he described it: Under the scale of prices then in effect, certain classes of printing carried a disproportionate part of the cost of production, while other classes escaped charges for work actually performed. The overcharge was caused by the unscientific manner in which price scales had been increased or decreased by flat percentages to correct over- or under-cost recoveries by the Office. Such action was patently inaccurate, since individual operations of production do not remain in exact cost relation to all others. It was useless for the departments to attempt to plan their work in the most economical manner, as such savings were not reflected in the charges. Inasmuch as no dependable facts as to basic unit costs were then compiled, it was impossible to establish a scale of prices based on actual costs until a

system was installed whereby these costs could be ascertained. This was the major reason for the installation of our present cost-accounting and production-control system. This system, established before the war, has eliminated cost inequities, uncertainties, and many complaints from requisitioning agencies.

Our Scale of Prices, which is directly derived from known costs and from which all charges for printing and binding are made, makes possible the detailed production planning that is saving ordering agencies many times the annual cost of our accounting planning, and other administrative operations involved. Labor costs in the Office approximate those in effect in large printing centers; productivity of machines and employees is comparable to that of commercial plants; and material costs are similar. Our management methods are followed by the industry.

Although an attempt is made to recover only actual cost, it is not possible to be exact, and it has been found that the recovery from the scale may exceed cost by 1 percent or a little more. On the basis of a \$45,000,000 volume of business in the current 1948 fiscal year, with conditions approximately normal, and assuming that the work in process remains at the present level, we anticipate turning back to the Treasury about \$450,000. There is an unusual situation at present in connection with the receipt of a large amount of paper from war-surplus property, which this year may raise the excess-recovery figure from 1 to 3 percent, or even slightly more—as high as \$1,350,000. If machinery and equipment should become available, it is entirely possible that much of this amount would be allocated for the purpose of modernizing the plant. Or if the paper market eases, it probably would be advisable to increase our inventories of regular stocks, surplus items not always being of standard size and grade for economical use.

Under our system of cost accounting, a detailed description of which follows, the Office charges for printing must represent reasonable and accurate cost figures.

ESTIMATED CHARGES

The ordering department is furnished a statement of the estimated cost of the work to be done. Material-cost estimates are based upon the quantity to be used and figured at the cost rates which are expected to prevail during the period to be covered by production. The estimated production time is multiplied by the operation or machine all-inclusive hourly rate. The total estimate represents the cost, by principal items, as planned for the production of the work.

SOURCE RECORDS

In order to facilitate provision of simplified, accurate, and standardized work instructions and to coordinate and control production, central work-recording stations have been established throughout the service and production sections. Employees receive assignments and complete instructions at these stations, where all source records of time, labor, material, and machine costs originate.

"MARK-SENSING" LABOR, PAY-ROLL, AND COST DISTRIBUTION

Of the several ways of posting data on tabulating cards, the mark-sensing method has been adopted for purposes of pay-roll and cost distribution. The mark-sensing device automatically reads and converts pencil marks into punched holes to be interpreted by other machines. Use of a special pencil produces a mark which, being electrically conductive, completes an electrical circuit that actuates the punching device.

Four cards of different color are used to handle pay-roll and cost records: The regular pay-roll card, the exception pay-roll card, the cost-distribution card, and the detail-out card (fig. 1).

The regular pay-roll card requires no marking or recording by the accounting clerk other than clocking. Made up in advance and punched completely before it is sent to the various sections, it contains the information needed for pay-roll purposes: Date, employee's name and number, division, section, shift, clock number, and usual rate, hours, and amount. When these cards are clocked in as the employees report for work in the section each day, they are filed in man-number sequence at each clock center to simplify the procedure to be used during the workday.

In the event an employee works at tasks other than his regular designation, an exception pay-roll card must be made out to take the place of the regular card.

The cost-distribution cards are kept in order by operation and class numbers which are prepunched in the cards and printed at the top of the card for convenience. Whenever an employee begins work on a different operation or jacket, he receives a cost-distribution card prepunched with the operation and class of the work he is to perform and stamped with the starting time of that particular operation. At the completion of that operation, his card is again time-stamped. The employee records on the left of the card his man number, rate, machine, group, jacket number, and amount of production. The specified columns on the right of the card are marked with a special

pencil by an accounting clerk: Machine number, group, jacket number, hours, and production. As each cost-distribution card is completed for an employee, it is filed in back of his regular pay-roll card in the regular "completed" file.

Upon completion of the marking and recording of the cards, they are checked visually by the accounting clerks for agreement, each employee's cost-distribution cards are totaled and balanced with his pay-roll card. After checking, the cards are sent to the Division of Accounts, where the information marked on the cards is read automatically and punched in the cards by the mark-sensing machine. Another machine automatically multiplies the rate of pay by the hours, and punches the resulting amount in the cards. Still another machine records the information, adding the hours and amount for each employee. A tabulated statement is thereafter produced, showing on the same sheet, opposite each employee's name; his time and salary balanced against the cost distribution to the various operations and classes of work performed. This is the basic information for automatic preparation of pay roll and other cost reports.

By accumulating the pay-roll cards for the 2-week pay period and by performing automatic mechanical summarizations, multiplications, additions, and subtractions, cards are obtained with the final information necessary for pay-roll purposes. This consists of gross amount, retirement, withholding tax, bond deduction, and net amount of pay. At this time, all cards are combined and the final pay rolls are prepared by machine. All work in the preparation of the pay rolls for the entire Office is performed within 2 days, and it is all done automatically.

In order to obtain the cost distribution of time worked by each employee, the cost cards are duplicated by machine and the duplicates sorted by operation and class. A statement is prepared automatically by machine, showing earnings of each employee and the applicable cost distribution. These reports are available within 8 hours after close of the working day and are audited progressively each day.

MACHINE PRODUCTION

In some of the production sections, such as in the Presswork and Binding Divisions, machine equipment represents the producing factor, and a complete daily record is kept of the work performed by each machine, including labor in operating it. Central work-recording stations are used in the same general manner as for labor-cost recording.

As in the case of labor-distribution cards, the machine-production cards are sent to our Accounting Division at the end of the shift,

where they are punched and automatically recorded according to the kind of work reported.

All materials needed by sections of the Office are requisitioned on standardized forms, and the basic information is punched into tabulating cards. The punched cards are sorted, together with master cards containing the correct unit price for the property number, and then multiplied to determine the total amount of cost of each requisition. Vouchers for services, such as telephone, power, freight, storage, supplies, are similarly coded and recorded. The cost and administrative accounting systems are arranged to balance through the general ledger.

The cost-accounting system facilitates rapid preparation of accurate daily and monthly statements, giving detailed information as to the cost of each job, operation and class of work performed, the cost of operating each section and division, and the total Office operating cost. It makes possible speedy analysis and comparison of various cost factors, so that management may note and correct any mistakes in performance. The principal statements which are automatically produced are the Daily Cost Statements, the Monthly Cost Statements for sections, and the Monthly Comparative Production Statements.

DAILY COST STATEMENT

The labor cost of each section is shown in a separate daily report. It includes all reports by man number, operation and class numbers, hourly wage of employee, jacket number of job for which work is produced, the number of hourly units required, and the actual production accomplished. This report lists all employees, whether in a pay status or not. When an employee is on leave, the report shows the kind of leave to be charged to his account. This information is also reflected on the Daily Reconciliation of Pay Roll and Cost Distribution. The daily statement of machine production shows the machine number, number of hourly units used, and actual production of the machine. Besides the daily costs, these statements provide a comparison of actual and standard production (fig. 2).

MONTHLY COST STATEMENT FOR SECTIONS

A monthly Statement of Cost and Production for each section and shift is tabulated and furnished to individual foremen (fig. 3). It includes all costs of operating the section, such as leave and holiday pay, salaries of supervisors and clerks, maintenance and repair costs, general labor costs, direct labor costs, and production by operation and class.

[illegible]

By comparison of the actual production with the standard production figures also provided, variations from the standard may be determined and corrective action taken.

MONTHLY COMPARATIVE PRODUCTION STATEMENT

Foremen are also furnished a monthly report of each operation and class of work performed for comparison with other shifts, past production records, and standard production. The comparative report by shifts includes the operation and class numbers, total number of hourly units, total number of units produced, and the average hourly production (fig. 4).

Comparisons of this nature are valuable, because they enable foremen to learn something of conditions outside of their own sections and to judge the effectiveness of their own methods. Comparing production with that of other sections is an incentive to improve business methods and a means of increasing manufacturing efficiency.

MONTHLY COST REPORT

At the end of each month, all the daily cost cards, which have been summarized and filed, are arranged according to the various sections of the Office, and monthly cost reports are prepared. These reports are utilized in developing all-inclusive hourly costs for the various chargeable operations and cost of each unit of production. They show the cost of each item, the number of hours for each type of productive and nonproductive work, and the total production.

PRODUCTION STANDARDS

By means of the information developed by the cost-accounting system, costs of operations by individual employees, groups of employees, or machines may be determined. Cumulative totals by months are maintained. By combining the performance cost record with the production record, cost and production standards are obtained. These standards are used as the base in the establishment of unit selling rates, and in preparation of a schedule of prices which represents the average cost for each operation and class of work. In addition to standards obtained in this manner, research studies are made as to cost and production standards maintained by commercial printers and binders of the country. This information, combined with Office standards based on past performance, serves as a guide in setting the standards of performance the Office expects to achieve in future operations.

COMPARATIVE RECORD OF AVERAGE PRODUCTION PER HOUR BY SHIFT FOR APRIL 1941

OPERATION	NO. CLERKS	HOURS	SHIFT I		SHIFT II		SHIFT III	
			PRODUCTION	ACTUAL	PRODUCTION	ACTUAL	PRODUCTION	ACTUAL
BLANK	72							
CUMMING	58	72						
KOGE OR CORNER	58	72						
MAKEREADY	58	72	43	7	2			
UP TO 8 IN	58	72	19	2000	1053			
OVER 8 TO 18	58	72	94	3750	399			
OVER 12 TO 18	58	72	287	12700	443			
OVER 16 TO 24	58	72	303	13500	413			
ALL OVER SURF	58	72						
MAKEREADY	58	72	4	1	3			
UP TO 8 IN	58	72	7	300	429			
RULING	68	72						
MAKEREADY	68	72	1488	147	1			
UP TO 10 IN	68	72	180	22650	1358			
OVER 10 TO 22	68	72	1805	263729	1161			
OVER 22 TO 34	68	72	1522	182958	1302			
OVER 34 IN	68	72	115	9180	798			
REG DOWN LINES	68	72						
MAKEREADY	68	72	1696	123	1			
UP TO 10 IN	68	72	236	29641	1312			
OVER 10 TO 22	68	72	1934	270487	1399			
OVER 22 TO 34	68	72	452	61544	1262			
OVER 34 IN	68	72	122	11140	913			
DUAL L	68	72						
MAKEREADY	68	72	399	16				
OVER 22 TO 34	68	72	1630	217010	1331			
DISC	68	72						
MAKEREADY	68	72	47	1				
OVER 22 TO 34	68	72	530	254600	4804			
STRIPPING	68	72						
MAKEREADY	68	72	152	28	2			
UP TO 8 IN	68	72	4	50	125			
OVER 8 TO 12	68	72	138	3162	247			
OVER 12 TO 16	68	72	123	8002	651			

FIGURE 4.

HOURLY COSTS

The cost of the manufactured product consists of the sum of the direct costs—labor and material used in producing the order—plus all indirect costs, the charges to production orders, reported on cost-distribution and machine cards, consist of the direct costs only. To find the complete cost of manufacturing the product, it is necessary, therefore, to include, in the cost of each production order, the cost of applicable indirect expenses. This is called the all-inclusive hourly rate.

Because of their general nature, indirect expenses cannot be charged directly to each production order. They must, therefore, be distributed over production in such a manner that each kind of product and each lot of work produced will be charged its fair share of the indirect expenses. In the Government Printing Office, the direct-labor-cost method of distributing manufacturing expense is used.

HOW EACH JOB IS BILLED

The reports of productive work turned in daily are filed by jacket numbers. When work on a jacket is completed, all the cost cards are taken from the file and run through a machine which automatically multiplies the numbers of hours by the all-inclusive hourly rate for each of the operations involved and prepares the Jacket Cost Summary form. Every charge of labor and material for each different type of work entailed in the production of the job is recorded on this form. All charges include the overhead according to the all-inclusive hourly cost method. Thus the figures represent the total cost of completing each of the different kinds of work performed, and the form gives an accurate description of the actual method of production. The Jacket Cost Summary is then forwarded to our Computing Section so the job cost can be computed (fig. 5).

The computer is furnished a finished sample or copy of the job, the summary sheet of production operations, the estimate, and the production plan. The summary sheet and the estimate act as guides to the computer in pricing the order.

The computer prices the work in accordance with the average rate for each operation performed, as shown in our Scale of Prices, and the ordering agency is thus billed for the cost of every item that went into manufacture of the job.

Our computers work with the Jacket Cost Summary at the time the charges are being prepared and their review of the operation numbers contained in the summary indicates the method of production employed on the order. The report plainly shows the cost of produc-

STATIONER & PRINTER

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FIGURE 5.

tion and price at which the job is to be billed. Our computers, being well versed in all branches of printing and binding, can easily detect uneconomical production methods. If such cases arise, the method of production employed is investigated to determine whether better methods or procedures can be developed. At the time this system was installed, the Public Printer said:

If I am not disappointed in the results of this work, I am certain material savings can be made in our present production costs—possibly totaling over a million dollars annually.

His confidence has been sustained by the results obtained. The system actually has enabled the Accounting, Planning, and Production Divisions to carry on their work in the efficient manner that is giving the departments unprecedented service at most economical cost.

COSTS REDUCED

In the 1948 legislative branch appropriation hearings, the Public Printer outlined some of the steps being taken to offset as far as possible the steep increase in the cost of labor and materials. They include such obvious remedies as thorough planning of every publication, close control of production through cost studies by our Division of Accounts, examination of methods and procedures, and a broad program of employee education. Modernization of the plant is projected, but execution must await availability of equipment and parts. In the meantime, various new types of equipment are being studied in their relation to governmental requirements.

In addition to the foregoing, an extensive research program, fully described elsewhere in this report (p. 37), has been undertaken. It is expected that it will bring to light many improvements in utilization of materials and manpower.

WORK-SIMPLIFICATION PROGRAM

In order to make better use of machinery and equipment, eliminate waste, and utilize manpower to best advantage, a work-simplification program was inaugurated in 1944.

Supervisors and employees have been called on to analyze their tasks and submit proposals for short-cuts or improvements that will save time, material, and space, or otherwise promote efficiency and economy. Since the program was inaugurated, 1,161 proposals for improved procedure or new methods have been submitted. Of these, 711 have been approved and put into effect.

A single example will show the nature of the work-simplification

proposals and their effect on the work of the Office: The Congressional Record was formerly printed with rules separating the type columns. The rules had to be the exact length of the columns, which varied slightly in depth as pages were made up, and consequently required numerous cutting and notching operations. All this work was eliminated by a proposal for the substitution of blank slugs between the columns, with a resultant simplification of the make-up, an improvement in the typographical appearance of the page, and a saving estimated at \$3,500 annually. (See p. 145.) Division reports give descriptions of other proposals.

Some of the 711 accepted proposals have resulted in even greater economies. Others, naturally, are of lesser importance, but in the aggregate there is a large net gain for the Government through this kind of employee cooperation.

All employees have been invited, through their supervisors and by the Public Printer, personally, to participate in the work-simplification program.

Following is a tabulation showing the results to date:

Division	Number submitted	In process	Approved	Rejected
Composing.....	345	50	161	134
Bindery.....	154	5	102	47
Presswork.....	130	26	65	39
Planning.....	125	15	57	53
Maintenance.....	79	4	71	4
Platemaking.....	78	9	60	9
Accounts.....	64	2	55	7
Stores.....	53	2	42	9
Documents.....	47	5	40	2
Chief Clerk's Office.....	32	3	17	12
Tests.....	15	1	13	1
Personnel.....	11	0	9	2
Delivery.....	9	3	6	0
Purchases.....	8	0	5	3
Production Manager's Office.....	7	1	4	2
Public Printer's Office.....	4	0	4	0
Total.....	1, 161	126	711	324

The submitted proposals offer so many ideas for making improvements in machinery and equipment that the Office is undertaking to secure patents for employees on devices which can be used in Office operations. While the employee thus secures the benefits which may accrue from patent ownership, the Government has the free use of the idea. To date, 43 requests for patents have been received. Of these, 18 have been filed with the Justice Department for legal processing and 12 have been rejected because of previous patents or for other reasons.

It is not possible to evaluate accurately the total monetary saving to the Government through the proposals accepted and put into effect, but many of them represent genuine and important improvements. The printing industry has shown much interest in this program and commercial firms have also adopted a number of the suggestions resulting from it.

EMPLOYEE-EDUCATION PROGRAM

We feel that time and money spent in keeping employees fully informed of all conditions affecting their work are good investments. During the year, the Public Printer has taken advantage of every opportunity to bring pertinent matters to the direct attention of employees.

In December 1946, immediately after the approval of wage increases, he talked to all supervisors and representatives of wage-negotiation groups and outlined to them a number of common problems in the solution of which their help was asked.

Again on January 2, 1947, he gave a series of talks to all employees on each of the three shifts. He gave them a frank account of the over-all problems growing out of rising costs. He spoke of the work-simplification program and appealed for wider participation. Divisions whose production could be increased were told the reasons why it was not at the maximum and shown what was needed to bring it to that point. The talks explained in detail a number of the Office rules and regulations, as well as the reasons for their promulgation.

At that time reduction in force was being applied, or had recently been applied, to several divisions of the Office. In order that all employees might understand how such reductions affected the security of their positions, he explained the reduction-in-force procedures.

He also discussed with considerable emphasis the expected cuts to be made in printing appropriations for the departments and the need for this Office to produce every job ordered from it in the most prompt, most efficient, and most economical manner.

On January 30, 1947, the first of a new series of management conferences was held for supervisors. These conferences had been held regularly prior to the war, but had to be discontinued under the stress of work during the emergency. Supervisors are now being told, in these conferences, what their responsibilities are and how they can best meet them. The first conference was devoted very largely to the matter of strict observance of all regulations and procedures affecting employees and their work. There had been many complaints from supervisors when the reduction-in-force procedure resulted in the loss of competent

workers, without affecting employees whose performance left something to be desired. It was pointed out to the supervisors that the responsibility for retaining incompetent employees rested solely with them. A procedure was outlined by which the Office could build up a case history that would require incompetent or indifferent workers either to do a satisfactory job or be separated from the service.

Subsequent management meetings have covered such subjects as safety, housekeeping, sick-leave regulations, the health program, co-operation of the service division with production divisions, and other matters of day-to-day and long-range importance.

These conferences are a useful supervisory device, and future meetings, to be held at regular intervals, will be devoted essentially to every item of cost that is reflected in charges for public printing and binding.

CONSULTANT ON METHODS AND PROCEDURES

During the year, the office of the Consultant on Methods and Procedures started full-scale operations. The position was established April 1, 1946, in accordance with Administrative Order 38, after its purpose was explained at a management conference attended by the heads of divisions and sections. At this conference it was pointed out that the creation of the position of Consultant on Methods and Procedures in no way relieved any other official of the responsibility for the proper operation of his unit. The Consultant's sole duty is to study current problems, search out better equipment and methods, and make recommendations for improvement in any division or section of the Office.

In accordance with this assignment, the Consultant has held many group and individual conferences with administrative and production officials, which have resulted in improved procedures, production increases, and monetary savings.

By visits to other progressive plants, through correspondence, and by study of tests and reports, the Consultant has been able to secure adoption of devices, ideas, processes, and operations successfully employed elsewhere. All these are now proving beneficial to the Office.

The following are some of the results which have been directly or indirectly accomplished through the Consultant's efforts:

In cooperation with our Field Service Manager and a representative from our Accounts Division, all our field plants were inspected and studied, their operations analyzed, and recommendations made for their improvement.

The services of a telephone engineer were secured without expense to the Government, and several improved telephone installations have

resulted. An order for an automatic telephone exchange has been placed, with an anticipated annual saving of \$24,000.

An L-type disk ruling machine, with improved devices which allow greater production speed, has been installed.

New-type racks for gathering and collating loose sheets and signatures have been built and installed, and their use is now standard practice.

Small electronically operated jogging machines for use in collating loose sheets of paper have been adopted.

Electric neutralizers have been installed on the disk ruling machines to increase their production.

Bench-type electric or magnetic stitchers are now used for light stitching work. They eliminate the transfer of work to regular pedestal stitchers.

Packing tables have been set up at folding machines, so that pamphlets and folders may be packed at the machines when no further operations are needed.

Slightly larger punch holes on stenographer's notebooks for Wire-O-Binding are giving increased inserting production.

A single book trimmer has been ordered. This device is an attachment to a Christensen stitching machine which automatically trims pamphlets at the same time they are being stitched, without any additional manual labor.

Shipping labels, previously written by hand, are now duplicated on a mimeograph when 20 or more packages are addressed to one destination or have any common information in the shipping labels.

In the Press Division, a rubber-compound press blanket has been tested and established as standard on certain makes of presses. This blanket saves make-ready time and lengthens the life of printing plates.

Plans have been laid for installation of packaging and handling machinery in our Postal Card Section. This equipment is available, and will be installed in the near future.

The Office has undertaken the manufacture of snap-out forms in sizes and quantities it can manufacture more economically than commercial houses.

Monotype-spool tickets are now mimeographed instead of hand-stamped on all jobs requiring 100 or more identical spool tickets.

In the Division of Public Documents, the use of dictating machines has been established.

An office-type folding machine is being used for folding expiration notices or other types of office forms when sizable quantities are prepared for mailing.

Rotary hand and electric label pasters are being used instead of applying paste to labels by means of hand brushes and paste pots.

During the year, Printing Industry of America, Inc., representing approximately 3,200 commercial printers, started cooperative research with the Government Printing Office. To date, four meetings of the research committee have been held, and six research reports have been printed. (See p. 205.)

In the coming year, the Office will make a thorough study with a view to even more complete modernization. For this purpose, a committee composed of top administrative, planning, fiscal, and production executives has been organized. It will endeavor to find the most efficient production equipment which has been perfected and determine whether it is suitable for the requirements of the Office.

RESEARCH PROGRAM

The Government Printing Office is now engaged in a joint research program with Printing Industry of America, Inc., a Nation-wide organization of employer-printers. The program aims at the improvement of methods and the extension of scientific and practical information in the governmental and commercial fields of printing.

An address delivered by the Public Printer before the Franklin Typothetae Association of Detroit on June 8, 1944, contained the suggestion from which the program was developed:

Many departments of the Government function for the purpose of rendering services to some portion of the citizenry of the United States. For example, the Department of Agriculture is a great service organization for the agricultural industry of our Nation. It performs a wide variety and number of services for those who are engaged in agriculture. The Department of Labor performs an invaluable service not only for labor but for business as well.

Statistical research in a variety of fields has, over many years, brought into being a reservoir of information in various departments of the Government which cannot be duplicated. This is likewise true in other fields, such as general business, for which the Department of Commerce renders so invaluable a service.

Farseeing leaders in our industry often ask me why the graphic-arts industry should not organize itself along such lines, and why our industry should not enter into a cooperative relationship with its Government, through the Government Printing Office, to the end that there may be established a continuing technical and statistical research activity which will benefit every man and woman who may be connected with the investor, management, and labor branches in the graphic-arts field, as well as promote the general advancement of our country.

Some of the suggestions that have been made to me by our leaders are:

1. That the business firms and individuals in the printing and allied trades join together and take the Government Printing Office into their partnership.
2. That there be sent to the Government Printing Office a piece of new machinery every time new equipment is produced, so that the Government Printing

Office could try it out under daily working production conditions and be in a position to furnish authoritative and accurate reports of just what such a piece of equipment will actually do, a service similar in nature to that rendered by the Bureau of Standards to business firms in other industries. The information thus made available could be furnished either upon an individual's request or through the medium of an annual printing industry statistical and production yearbook, which could also contain a great deal of other material of benefit to the printing industry, such as that contained in the Statistical Abstract of the United States or the Department of Agriculture Yearbook. Among other things, such an annual reference book could also give the actual average production which might be expected from each piece of printing equipment manufactured in the United States.

3. That the Government Printing Office should be in a position to make quickly available to the industry as a whole, through its own research and by working with a unified graphic-arts organization, information desired and needed by individual members of the industry such as (1) the prevailing labor conditions in a certain city; (2) the prevailing wage scale for a certain operation; (3) the physical properties of the various materials used by the industry and how they will stand up in actual production; and (4) other similar information essential to the efficient and economical operation of a printing plant.

If carried through to a logical conclusion, the findings thus made possible would be invaluable to the industry and to the Government, which is by far the largest individual user of printing.

For several years no definite action was taken, although the proposal was widely discussed. Organization of Printing Industry of America, Inc., in July 1945, provided a Nation-wide group of printers, whose forward-looking officials moved promptly to materialize this proposal.

President Newcomb's letter to the Public Printer is a clear statement of the aims of the program:

AUGUST 19, 1946.

Printing Industry of America, Inc., and commercial printers throughout the United States recognize that the Government Printing Office is an ideal research center in which the technical problems of the printing industry could be solved.

The size of your organization and the multiplicity of tasks which it faces and the great responsibility placed upon it, make it necessary for the Government Printing Office constantly to seek newer and better ways of purchasing or utilizing equipment, materials, and manpower.

Printing Industry of America, Inc., believes that the developments arising from research opportunities in the Government Printing Office should be made available to private industry so that industry as a whole could benefit.

It is our belief that the undertaking of a comprehensive research program by the Government Printing Office and the publication of the results of this program would be an incentive to greater efficiency in the Government Printing Office itself and would be self-liquidating. No additional expense to current operations would be required.

For your consideration, I am submitting as a part of this letter an outline of the kind of research in which the Government Printing Office and the commercial printing industry are mutually interested.

If the general outline meets with your approval, Printing Industry of America, Inc., is prepared to call a conference of the leading production and research execu-

tives in the industry who would serve without cost as consultants under the program. * * *

The end use of the fully developed program would be by publication in book form by the Government Printing Office of a yearly manual kept up to date and offered for sale by the Government Printing Office to the 37,000 commercial printers in the United States.

This program and its purpose would be similar to the excellent work done for farmers by the Department of Agriculture in the distributing of its Yearbook for better farming methods.

Sincerely yours,

(Signed) JAMES F. NEWCOMB,
President.

President Newcomb states the advantages of the program correctly. It will be of great value to the Government, to the commercial industry, to individual printing houses, and to users of printing. Copies will be supplied to the industry through the Superintendent of Documents sales office and the Government will recover all costs in connection with this distribution.

Later, President Newcomb appointed the following Research Committee to work with officials of this Office:

- F. F. Pfeiffer, Reynolds & Reynolds Co., Dayton, Ohio.
- J. W. Siegel, Trade Bindery, New York, N. Y.
- R. J. Hogan, Blanchard Press, New York, N. Y.
- Bernard Snyder, American Typesetting Co., Chicago, Ill.
- W. G. Albrecht, Jr., Albrecht Co., Baltimore, Md.
- S. C. Hlasta, Carnegie Institute of Technology, Pittsburgh, Pa.
- F. E. Street, executive secretary, Graphic Arts Association, Baltimore, Md.
- J. R. Brackett, general manager, Printing Industry of America, Inc., Washington, D. C., ex officio.
- B. J. Taymans, assistant general manager, Printing Industry of America, Inc., Washington, D. C., ex officio.

Subcommittees are working under the direction of the committee chairman and the committee members.

The first meeting of the Research Committee was held at the Government Printing Office on February 28, 1947, and a large number of projects were selected for study by the committee and the Office. By the end of the fiscal year, two reports had been written, reviewed, approved, and submitted for publication. By September 10 six reports had been printed. Other studies are in various stages of processing.

Substantial benefits should accrue to the Office under the program, since the Research Committee will study and report on advances made in all areas of the commercial industry. President Newcomb

expects to assign a part- or full-time research expert to work on special problems with Government Printing Office technicians. Technical experts throughout the printing industry will be drawn into the program as consultants to the committee and its subcommittees. Organized research associations have already made many offers of assistance.

In the 1948 Legislative Branch Appropriation Hearings, the Public Printer described the Research Program as the first of three major steps being taken to reduce Government Printing Office costs. He also quoted a statement made by him before the first conference of Government Printing Office officials and the Advisory Committee of Printing Industry of America, Inc., which is, in part, as follows:

The Government Printing Office plans to place under the microscope every single one of its basic manufacturing methods to determine the most efficient techniques. It plans to conduct this research of its manufacturing techniques simultaneously with an intensive study of its management methods, with the object of eliminating outmoded procedures and techniques and bringing into use modern techniques of selection, training, placement, and compensation of personnel. Personnel relations especially need study, and policies and practices for a more efficient manner of dealing with this problem must be developed. A pooling of ideas as to what is to be adopted as standard procedure and technique upon completion of the reviews and research problems undertaken is essential.

At our management conferences, supervisors of all divisions were told of the research program—what it offers in the way of opportunity to them and how they could contribute through it to the success and advancement of the work of this Office, as well as the betterment of printing in general.

DIVISION OF ACCOUNTS

This Division performs the functions involving all fiscal and legal matters, including the handling of finances; accounting; bookkeeping; cost recording; current cost analysis; measuring ems of type in composition; audit of vouchers for supplies and materials and for printing done by contract; computing charges for all printing and binding jobs, blank paper and supplies furnished; record keeping and billing in connection with jobs produced during the fiscal year; receiving remittances from Government agencies for printing, binding, blank paper, and supplies furnished by the Office; and collecting all moneys due the Office from claims, damages, and sales of Government property. It is responsible for all budget work; studies in connection with rates for printing and binding operations, and their readjustment; compilation of cost of each printing job as the work progresses through the plant; preparation and audit of pay rolls; administration of the annual- and sick-leave laws and regulations; reports with reference to retirement

deductions; preparation of financial and cost statements, statistical tables, and reports for use of the Office in general and management officials of the operating divisions in particular; performance of all functions necessary in connection with the administrative processing and determination of claims for and against the Government Printing Office; and the rendering of decisions and furnishing of advice with respect to the applicability of the laws.

There were 384 employees in the Division of Accounts as of June 30, 1947, as against 122 on June 30, 1939, an increase of 262 for the 8-year period. This increase is due in part, however, to the addition of duties brought about by the transfer of 125 time-recording clerks from the production divisions and 8 employees of the Traffic Section formerly under the Director of Purchases.

Excluding these transfers of personnel to perform new and additional duties, the increase in employees for the Division amounted to approximately 100 percent for a more than 200-percent increase in business during the period.

The personnel problems existing during the war and thereafter have now eased to a point where we have begun to review many phases of the administrative procedures in effect, looking toward standardization and up-to-dateness in order to meet current needs of the service at a minimum cost.

Some of these projects are well underway. For instance, 116 obsolete forms have been eliminated, and 58 old forms have been consolidated into 8 new ones.

An inventory of the supplies and material on hand is in process of completion. Some of the other projects which are being undertaken are: Review of the cost and administrative accounting systems and procedures with a view toward bringing them in line to meet current requirements; review of cost-distribution methods and procedures; review of present practices and procedures to determine whether they are in accordance with existing laws; review of title 44 of the United States Code, for recommending desirable changes to effect economy and efficiency in operations and administration; review of cost reports, looking toward elimination of discrepancies and the discontinuance of reports which may be considered nonessential.

STATISTICAL RECORDS SECTION

During the year the Statistical Records Section processed 6,943 regularly scheduled statements and reports, including several new ones involving the tabulation of 31,063,400 cards. We also prepared many special reports. These reports represent an increased work load over

the previous year which we were able to absorb with a minimum force because of revisions effected in methods and procedures, as well as changes in tabulating equipment.

Examples of additional work absorbed without increase of personnel are the records for storage of printing plates and reproducibles, the contractors' paper inventory report after audit of balances in contractors' plants, and the inventory of materials in Stores, representing 14,000 items.

TREASURY ACCOUNTS SECTION

During the fiscal year 1947, the Treasury Accounts Section audited and prepared checks in payment of 47,991 vouchers. These included 27,232 vouchers amounting to \$12,906,982.98 for commercial printing. Total fiscal-year disbursements (excluding pay roll) amounted to \$30,947,994.64. Disbursements for these purposes during the fiscal year 1939 were only \$6,638,868.75.

Paper orders, which were audited and paid, increased in proportion to the volume of printing. Bills of lading, which numbered 139 for the fiscal year 1939, totaled 6,350 in the year under report.

Our Delivery Confirmation Unit processed 7,270 jackets and examined 12,929 billings, checking materials to be returned by contractors, examining receipts to assure complete deliveries, contacting departments to obtain missing confirmations of delivery of the work performed, seeking to expedite payments on long-standing accounts, and performing many other related duties.

Our Accounting Unit, consisting of four employees, maintains the general-ledger control accounts designed to reconcile the administrative accounts with the cost accounts and to show the assets, expenditures, liabilities, revenues, capital, and the unobligated and unexpended appropriations, as well as the current status of appropriations and funds available for expenditure, amounts due and collected; accountability for the value of materials, supplies (Stores), and equipment; the value of plant and other property; accumulated reimbursable earnings and expenditures; the liabilities for trust funds, and the resulting capital or net accountability. Our accounting system conforms in part to the uniform accounting system outlined by the General Accounting Office and to the standard commercial accounting system.

Our Paper Inventory Unit, which consists of a supervisor and a clerk-typist, maintains records of the amount of paper and cartons in the plants of various printing contractors engaged in program printing work. As of June 30, 1947, there are 68 such contractors.

Shortages in the balances reported, either as a result of physical

inventories or as indicated by returns of paper upon completion of a program, are charged to these contractors. Probable shortages, amounting to \$47,060.86, have been revealed, of which \$33,584.01 has been recovered, and \$13,476.85 is being held subject to further analysis and information. Of the amount recovered, \$6,447.10 was subsequently refunded as a result of claims by contractors, leaving a net recovery to date of \$27,136.91 resulting from inventory shortages.

During the year, this Unit also kept records on the 14,211,647 pounds of paper issued for use on 17,288 print orders, amounting in value to \$1,653,847.63.

TRAFFIC SECTION

It is the responsibility of the Traffic Section to instruct contractors, department representatives, and all sections of this Office concerned with shipments, in the procedure to be followed in selecting shipping and transportation media, in proper methods of preparing shipments including labeling, and in classifying material to be shipped.

Large-scale shipping by the Office is a wartime development. Prior to the emergency period, we made all deliveries to the ordering agency, usually in the District of Columbia, and the agency in turn broke down the distribution and made its own shipments to field offices. The distribution was customarily made by railway express. The beginning of commercial procurement by the Office changed this pattern. When a job was needed, let us say, on the west coast, it was printed in that area if found to be more economical to the Government. The agencies had no facilities for making the distribution, and in many cases the contractors were required to take over the work. Eventually, nearly all departments and agencies began to use this service and to supply distribution lists with their orders. We thus assumed the responsibility for delivery to thousands of points throughout the country. Forms and publications produced in the Government Printing Office were handled in a similar manner and single jobs have thus been distributed to as many as 45,000 destinations. Our printing procurement program likewise affected the transportation of blank paper from mill to contractor, mill to the Office, the Office to contractor, and even contractor to contractor. It was also necessary to consider the routing of shipments to save time and meet delivery deadlines. Economies in shipping were made by selecting the shortest and most practicable route. We took every possible advantage of rate differentials available by the use of Army and Navy consolidated service and land-grant roads for shipment of all printed material for the Army, Navy, Marine Corps, and Coast Guard.

During the fiscal year, we issued 18,051 bills of lading, including those of departments which furnished us with quantities kept on hand for issuance in connection with their consignments. Bills of lading issued before the emergency averaged less than 150 annually.

This Section examines all transportation bills to determine whether the charges are in accordance with the classifications. During the year we returned to carriers for correction bills carrying overcharges of \$36,120. For example, on a single carload of blank paper misclassified as "sensitized," the Office escaped a \$740 overcharge through our review of charges. Freight claims totaling \$22,495 were filed during the year.

In the past 6 fiscal years, in-bound transportation of blank paper and out-bound shipment of printed material totaled approximately 37,000 carloads. By a conservative estimate, we have prevented a million dollars in charges against the Government on this volume of traffic through our careful planning and supervision of shipments to avoid reshipping, demurrage, improper routings, and faulty ratings that are everyday occurrences when traffic is handled casually.

On rush shipments suitable for parcel-post handling the post office's service has been prompt, economical, and efficient. It is used by us whenever possible, and the cooperation of the post office has been very helpful when special arrangements had to be made to expedite deliveries of important material.

DUPE MEASUREMENT SECTION

The Dupe Measurement Section measures, records, and reports the number of ems of type set in the Office and serves as a source for production information for this phase of operation.

In 1947, we measured 2,007,853,700 ems of type. We also recorded the number of hours reported to the various operations and classes of work for all operators in our Linotype, Monotype, and Patents Sections, and for readers in the Patents Proof Unit.

The marked turn-over of operators results in additional daily and weekly reports from the Dupe Measurement Section to the Superintendent and the foremen of the Composing Division. The establishment of delivery schedules has resulted in shorter "takes" for the operators and more proofs to be measured.

REPAY ACCOUNTS SECTION

Thirteen employees in the Repay Accounts Section are responsible for the preparation and mailing of 15,036 bills to the various depart-

ments and agencies for printing and binding. It maintains records of work ordered, work charged, and moneys received. Control of the status of each printing and binding appropriation is accomplished from information contained in the printing and binding estimates furnished by the planning divisions as compared with the amount previously billed and the amount unobligated. The appropriation laws are reviewed to determine the availability of printing and binding funds for established governmental agencies as well as for newly created and abolished bureaus.

Charges for printing and binding for the fiscal year 1947 were \$53,692,706.67. In the fiscal year 1939, they were \$18,238,045.10. The number of bills issued was approximately 14,000 each year; consolidation of many individual orders into a single monthly jacket, through the print-order procedure, permitted the detailed listing of many orders on a single bill.

The principal decrease in departmental printing for 1947 was in the War Department—39.3 percent off the 1946 level. The principal increases were Veterans' Administration (364.7 percent), Agriculture (47.9 percent), and Post Office (36.4 percent). More than \$3,500,000 was billed the War Assets Administration.

COMPUTING SECTION

Determination of the proper charges for printing and binding, blank paper, and miscellaneous services for Congress and the various Federal departments and agencies is the principal function of this Section.

In an office the size of the Government Printing Office, the planning of work for production, the physical handling of necessary papers required to provide cost records, and the proper coding of materials and supplies issued are major tasks. Although every effort is made to prevent errors from finding their way into individual jacket charges during the course of manufacture, they sometimes are not noted until the final jacket computation is made by our Computing Section. During the fiscal year, 3,866 query slips were sent to the various sections of the Office in an effort to correct individual jacket charges. These query slips not only tend to protect the departmental printing and binding appropriations by assuring the correction of erroneous charges but they also serve to correct cumulative cost and performance records. Moreover, they bring to the attention of the Planning and Production Managers deviations from the original plan of processing and assist in developing more adaptable or fitting procedures for similar future jobs.

The Section has 39 employees in one Posting and three Computing

Units. The Posting Unit maintains records of the amounts credited to each productive division for work performed, the charges for various classes of work, and other production records which are used in establishing rates. The Computing Units determine printing and binding charges.

Employees of this Section must be familiar with our Scale of Prices and our Schedules of Operations for all divisions; questions are raised whenever inaccurate production figures are found. They also make a final check on all printing and binding purchased commercially to determine that the specifications have been met and the contract terms complied with.

The work jackets reviewed and computed totaled 86,551.

COST ACCOUNTS SECTION

This Section, with 27 employees, compiles data which are used in the preparation of the over-all cost reports, including indirect charges and prorations. It also makes miscellaneous studies and special reports for management and furnishes detailed information for the preparation of our Scale of Prices for the work produced in the Government Printing Office. It assists in the review and preparation of the schedule of operations and classes of work for the Binding, Composing, Platemaking, Presswork, and Maintenance Divisions, and for miscellaneous sections.

The mark-sensing method of posting data to tabulating cards for purposes of pay-roll and cost distribution has made possible the daily reconciliation of distribution of labor costs with pay roll, and has enabled us to handle the work more expeditiously and with fewer employees.

Development of all-inclusive hourly and unit costs for each of the numerous production operations involved the auditing of daily tabulated statements of labor, material and supplies, and hand- and machine-production costs (including the investigation and correction of errors made in reporting) for each of the 67 sections in various divisions. The work of all employees in this Section, except one person assigned exclusively to duties in connection with our field offices, contributed in some way to the development of these costs, and their review provides a reliable basis for the setting of our Scale of Prices.

Approximately 140,000 orders on our Chief Storekeeper and sub-stores orders for paper, envelopes, and other materials and supplies were reviewed during the year to insure charges against operations on jackets or against various sections.

The cost accounts are reconciled monthly with expenditures recorded

in the general ledger. Comparative statements of total operating expenses by months (with cumulative totals) for each production section; and consolidated statements of operating expenses for each of the maintenance and service sections and for the administrative and planning divisions and monthly statements of operating expenses, also showing cumulative totals; and monthly statements of profit and loss are compiled in this Section.

For each shift of the various sections of the production divisions, tabulated monthly statements of cost and production are audited and reconciled with the cost accounts. Monthly cost statements for the Maintenance Division are also reviewed. These statements go to the various foremen to keep them informed as to performance and cost.

We prepare, among others, monthly and annual reports of cost of manufacturing ink, rollers, and glue; quarterly and yearly reports showing unit costs in the production of electrotypes, stereotypes, rubber plates, and plastic plates; and statistical tables on production and operating expenses for each production section for use in the annual report of the Public Printer.

We maintain property record cards for each individual piece of machinery and equipment, and a cumulative record of cost of repairs is entered. We record information as to mileage, gas and oil used, and repairs on delivery trucks and passenger cars.

In July 1946, we were assigned the work of checking and consolidating financial statements, maintaining a general ledger reflecting in summary form consolidated information, reconciling monthly accounts current, and maintaining property records of equipment and machinery for the 14 field offices transferred from Treasury Procurement. This work is done by one employee in the Field Service Unit with the part-time assistance of two clerks from other units in this Section. In addition, considerable time has been devoted to this new work by the Chief of the Cost Accounts Section, who also assisted in the preparation of an accounting manual for use in our field offices.

A description of our cost-accounting system will be found at page 19.

PAY ROLL SECTION

This Section maintains leave records for all employees of the Office; daily reconciles cost with pay roll; maintains retirement and withholding-tax records of all employees and special records of employees who are injured in line of duty. It verifies, completes, and submits to the General Accounting Office all claims made for salary and unconsumed leave due deceased employees, and audits the entire Office pay roll, which amounts to more than \$1,750,000 monthly. During the

year, approximately 150 claims for compensation of employees injured in line of duty were processed.

Since the installation of the mark-sensing system to simplify the vast increase of pay-roll work brought about by much overtime, holiday work, and changes in the workweek, the Pay Roll Section proper has been reduced from 32 to 24 employees, who compile more information than was compiled previously by the larger force.

Changes in the laws and regulations pertaining to sick and annual leave, which were standardized under authority of the two Leave Acts of March 17, 1946, and changes in Office regulations, particularly with reference to leave without pay for illness, and leave without pay for veterans to enable them to take advantage of their rights and privileges in accordance with law, have increased the volume of our work. The frequent changes in salaries and pay scales in recent years also have created much work which we had to absorb.

The Pay Roll Section furnishes information regarding questions on pay, leave, applicable decisions of the Comptroller General, and civil-service regulations in reference to these subjects, as well as the laws pertaining to them.

RESOURCES AND LIABILITIES

The total resources available to the Government Printing Office during the fiscal year ended June 30, 1947, including the Office of the Superintendent of Documents and appropriations and payments for work, amounted to \$81,034,774.20, as compared with \$69,514,764.54 for the fiscal year 1946, an increase of \$11,520,009.66, or 16.6 percent.

Obligations incurred during the fiscal year 1947 totaled \$79,924,-830.36, leaving an unobligated balance of \$1,109,943.84 subject to overadjustments or underadjustments on outstanding obligations of \$9,274,524.53 on July 1, 1947. Obligations incurred in 1947 showed an increase of \$10,942,233.32 over those for 1946.

The total compensation paid to employees, including those of the Office of the Superintendent of Documents but not including employees in the Field Service Offices, during the fiscal year 1947 amounted to \$21,443,472.72, which included \$1,023,665.02 deposited to the credit of employees in the retirement fund through the 5-percent deduction as required by law.

The total expenditures and obligations for compensation of employees in the Field Service Offices were \$2,313,996.80.

Table 1 gives the details of all resources available to the Government Printing Office for the fiscal year ended June 30, 1947, and all liabilities incurred against those resources during the fiscal year.

TABLE 1.—*Resources and liabilities under appropriations for fiscal year ended June 30, 1947*

RESOURCES

Appropriation for working capital, legislative act (Public 479, 79th Cong.), approved July 1, 1946.....	\$24, 200, 000. 00	
Deficiency act (Public 122, 80th Cong.), approved June 27, 1947.....	1, 175, 000. 00	
Repayments from all sources for printing and binding.....	42, 147, 982. 40	
Payments from various sources.....	443, 394. 28	
Payments from Field Service Offices.....	4, 767, 697. 43	
Bills receivable, July 1, 1947, for printing and binding furnished.....	5, 486, 041. 43	
Bills receivable, July 1, 1947, for refunds....	96, 198. 32	
Bills receivable, July 1, 1947, for Field Service Offices.....	538, 960. 34	
	<hr/>	\$78, 855, 274. 20
Appropriation for salaries, Office of Superintendent of Documents (Public 479, 79th Cong.), approved July 1, 1946.....	1, 300, 000. 00	
Deficiency act (Public 122, 80th Cong.), approved June 27, 1947.....	21, 500. 00	
	<hr/>	1, 321, 500. 00
Appropriation for general expenses, Office of Superintendent of Documents (Public 479, 79th Cong.), approved July 1, 1946.....		370, 000. 00
Appropriation for penalty mail costs (Public 479, 79th Cong.), * approved July 1, 1946.....		353, 000. 00
Appropriation for overtime, leave, and holiday compensation (Public 575, 79th Cong.), approved July 31, 1946.....		135, 000. 00
		<hr/>
Total resources available for fiscal year 1947.....		81, 034, 774. 20

LIABILITIES

Working capital and repayments for printing and binding:		
Disbursed to June 30, 1947, other than Field Service Offices.....	\$44, 439, 019. 14	
Disbursed to June 30, 1947, Field Service Offices.....	4, 374, 076. 14	
Outstanding, July 1, 1947, other than Field Service Offices.....	8, 686, 769. 13	
Outstanding, July 1, 1947, Field Service Offices.....	412, 125. 67	
	<hr/>	
Total disbursed and outstanding obligations.....		57, 911, 990. 08
Salaries, Office of Superintendent of Documents:		
Disbursed to June 30, 1947.....	\$1, 262, 344. 61	
Outstanding obligations, July 1, 1947....	52, 878. 12	
	<hr/>	
Total disbursed and outstanding obligations.....		1, 315, 222. 73

TABLE 1.—*Resources and liabilities under appropriations for fiscal year ended June 30, 1947*—Continued

LIABILITIES—continued

General expenses, Office of Superintendent of Documents:		
Disbursed to June 30, 1947-----	\$359, 698. 71	
Outstanding obligations July 1, 1947----	10, 301. 29	
Total disbursed and outstanding obligations-----		\$370, 000. 00
Penalty mail costs, Government Printing Office:		
Disbursed to June 30, 1947-----	\$195, 559. 12	
Outstanding obligations, July 1, 1947----	65, 186. 00	
Total disbursed and outstanding obligations-----		260, 745. 12
Overtime, leave, and holiday compensation, Government Printing Office:		
Disbursed to June 30, 1947-----	\$19, 608. 11	
Outstanding obligations, July 1, 1947----	47, 264. 32	
Total disbursed and outstanding obligations-----		66, 872. 43
Total disbursed to June 30, 1947-----	\$50, 650, 305. 83	
Total outstanding obligations, July 1, 1947--	9, 274, 524. 53	
Total disbursed and outstanding obligations, July 1, 1947--		59, 924, 830. 36
Outstanding obligations returnable to U. S. Treasury-----	20, 000, 000. 00	
Grand total disbursed and outstanding obligations-----		79, 924, 830. 36
Unobligated balance (subject to 10 percent over or under on out- standing orders)-----	1, 109, 943. 84	
Total liabilities-----		81, 034, 774. 20

Table 2 is a summary statement showing all financial transactions during the fiscal year ended June 30, 1947, covering appropriations made for the fiscal years 1945, 1946, and 1947. This statement also gives a summary of all expenditures for various items during the fiscal year 1947, regardless of the appropriation from which paid, together with a recapitulation of disbursements by major items.

Table 3 is a statement of all money deposited during the fiscal year 1947 by the Disbursing Officer as repayments for printing, binding, blank paper, and supplies furnished by the Central Office to the executive departments and independent Government establishments, for work produced by the Field Service Offices, and receipts from various miscellaneous items, and the appropriation to which deposited. The receipts from these sources during 1947 totaled \$52,689,233.69, as compared with \$63,082,807.71 in 1946, a decrease of 16.5 percent.

TABLE 2.—Summary of financial transactions in fiscal year ended June 30, 1947,
covering appropriations for fiscal years 1945, 1946, 1947

APPROPRIATION FOR 1947

	Resources	Disbursements	Unexpended balance on July 1, 1947, from the appropriation for 1947
Public printing and binding:			
Legislative Act of July 1, 1946.....	\$24, 200, 000. 00	-----	-----
Deficiency Act of June 27, 1947.....	1, 175, 000. 00	-----	-----
Credits to appropriations by payments from all sources for printing and binding and other receipts from miscellaneous sources, other than Field Service Offices.....	42, 591, 376. 68	-----	-----
Credits to appropriation, Field Service Offices.....	4, 767, 697. 43	-----	-----
Bills receivable, other than Field Service Offices.....	5, 582, 239. 75	-----	-----
Bills receivable, Field Service Offices.....	538, 960. 34	-----	-----
Disbursed for labor.....		\$19, 424, 067. 44	-----
Disbursed for paper.....		12, 425, 835. 44	-----
Disbursed for lithographing and engraving.....		31, 070. 42	-----
Disbursed for materials and supplies.....		12, 558, 045. 84	-----
Disbursed by Field Service Offices.....		4, 374, 076. 14	-----
Total.....	78, 855, 274. 20	48, 813, 095. 28	\$30, 042, 178. 92
Salaries, Office of Superintendent of Documents:			
Legislative Act of July 1, 1946.....	1, 300, 000. 00	-----	-----
Deficiency Act of June 30, 1947.....	21, 500. 00	-----	-----
Disbursed.....		1, 262, 344. 61	-----
Total.....	1, 321, 500. 00	1, 262, 344. 61	59, 155. 39
General expenses, Office of Superintendent of Documents:			
Legislative Act of July 1, 1946.....	370, 000. 00	-----	-----
Disbursed.....		359, 698. 71	-----
Total.....	370, 000. 00	359, 698. 71	10, 301. 29
Penalty mail cost, Government Printing Office:			
Legislative Act of July 1, 1946.....	353, 000. 00	-----	-----
Disbursed.....		195, 559. 12	-----
Total.....	353, 000. 00	195, 559. 12	157, 440. 88
Overtime, leave, and holiday compensation, Government Printing Office:			
Act of July 1, 1946.....	135, 000. 00	-----	-----
Disbursed.....		19, 608. 11	-----
Total.....	135, 000. 00	19, 608. 11	115, 391. 89
Grand total appropriation.....	81, 034, 774. 20	50, 650, 305. 83	30, 384, 468. 37
Deduct outstanding obligation of June 30, 1947.....			29, 274, 524. 53
Unobligated balance of 1947 appropriation, June 30, 1947.....			1, 109, 943. 84

TABLE 2.—Summary of financial transactions in fiscal year ended June 30, 1947, covering appropriations for fiscal years 1945, 1946, 1947—Continued

APPROPRIATION FOR 1946

	Resources	Disbursements	Unexpended balance on July 1, 1947, from the appropriation for 1946
Public printing and binding:			
Unexpended balance, July 1, 1946.....	\$21, 636, 263. 62	-----	-----
Credits to appropriation by payments from all sources for printing and binding and other receipts from miscellaneous sources.....	5, 190, 908. 77	-----	-----
Bills receivable, June 30, 1947.....	23, 701. 39	-----	-----
Disbursed for labor.....	-----	\$712, 075. 58	-----
Disbursed for paper.....	-----	2, 299, 916. 88	-----
Disbursed for lithographing and engraving.....	-----	31, 131. 47	-----
Disbursed for materials and supplies.....	-----	3, 438, 870. 48	-----
Disbursed for surplus fund.....	-----	20, 000, 000. 00	-----
Total.....	26, 855, 873. 78	26, 481, 994. 41	\$373, 879. 37
Salaries, Office of Superintendent of Documents:			
Unexpended balance, July 1, 1946.....	75, 870. 86	-----	-----
Credit to appropriation.....	28. 86	-----	-----
Disbursed.....	-----	44, 488. 81	-----
Total.....	75, 899. 72	44, 488. 81	31, 410. 91
General expenses, Office of Superintendent of Documents:			
Unexpended balance, July 1, 1946.....	113, 775. 80	-----	-----
Disbursed.....	-----	113, 698. 51	-----
Total.....	113, 775. 80	113, 698. 51	77. 29
Penalty mail cost, Government Printing Office:			
Unexpended balance, July 1, 1946.....	148, 451. 25	-----	-----
Disbursed.....	-----	79, 840. 40	-----
Total.....	148, 451. 25	79, 840. 40	68, 610. 85
Grand total appropriation.....	27, 194, 000. 55	26, 720, 022. 13	473, 978. 42
Deduct for outstanding obligation on June 30, 1947.....	-----	-----	170, 504. 74
Unobligated balance for 1946 appropriation on June 30, 1947.....	-----	-----	303, 473. 68

APPROPRIATION FOR 1945

	Resources	Disbursements	Unexpended balance on July 1, 1947, from the appropriation for 1945
Public printing and binding:			
Unexpended balance, July 1, 1946.....	\$1, 116, 326. 65	-----	-----
Credits to appropriation.....	39, 679. 60	-----	-----
Bills receivable for June 30, 1947.....	16, 203. 96	-----	-----
Disbursed for labor.....	-----	\$464. 28	-----
Disbursed for materials and supplies.....	-----	212, 656. 90	-----
Total.....	1, 172, 210. 21	213, 121. 18	\$959, 089. 03

TABLE 2.—Summary of financial transactions in fiscal year ended June 30, 1947, covering appropriations for fiscal years 1945, 1946, 1947—Continued

APPROPRIATION FOR 1945—Continued

	Resources	Disbursements	Unexpended balance on July 1, 1947, from the appropriation for 1945
Salaries, Office of Superintendent of Documents:			
Unexpended balance, July 1, 1946.....	\$61, 286. 07		
Disbursed.....		\$32. 00	
Total.....	61, 286. 07	32. 00	\$61, 254. 07
General expenses, Office of Superintendent of Documents:			
Unexpended balance, July 1, 1946.....	7. 03		
Total.....	7. 03		7. 03
Penalty mail cost, Government Printing Office:			
Unexpended balance, July 1, 1946.....	16, 923. 50		
Total.....	16, 923. 50		16, 923. 50
Grand total appropriation.....	1, 250, 426. 81	213, 153. 18	1, 037, 273. 63
Deduct for outstanding obligation on June 30, 1947.....			94, 866. 44
Unobligated balance of 1945 appropriation on June 30, 1947.....			942, 407. 19
Total unobligated balances, subject to change by 10 percent over or under on outstanding obligations:			
1945.....			942, 407. 19
1946.....			303, 473. 68
1947.....			1, 109, 943. 84
Total.....			2, 355, 824. 71

RECAPITULATION—ALL APPROPRIATIONS

Total paid for labor.....	¹ \$20, 136, 607. 30
Total paid for materials and supplies.....	16, 209, 573. 22
Total paid for lithographing and engraving.....	62, 201. 89
Total paid for paper.....	14, 725, 752. 32
Total paid by Field Service Offices.....	4, 374, 076. 14
Total paid for printing and binding.....	55, 508, 210. 87
Total paid for salaries, Office of Superintendent of Documents.....	² 1, 306, 865. 42
Total paid for general expenses, Office of Superintendent of Documents.....	473, 397. 22
Total paid for penalty mail cost.....	275, 399. 52
Total paid for overtime, leave, and holiday compensation.....	19, 608. 11
Total.....	57, 583, 481. 14
Total credit to surplus fund.....	20, 000, 000. 00
Grand total.....	³ 77, 583, 481. 14

¹ Includes \$966,809.77 deposited to credit of retirement fund.

² Includes \$56,855.25 deposited to credit of retirement fund.

³ Includes \$1,023,665.02 deposited to credit of retirement fund.

TABLE 3.—*Statement of all moneys deposited during fiscal year 1947*

1944

Deposited to the credit of appropriation for
public printing and binding:

Printing and binding for departments---	\$39. 85
Miscellaneous collections-----	11, 213. 19

 \$11, 253. 04

1945

Deposited to the credit of appropriation for
public printing and binding:

Printing and binding for departments---	33, 696. 81
Miscellaneous collections-----	5, 982. 79

 39, 679. 60

1946

Deposited to the credit of appropriation for
public printing and binding:

Printing and binding for departments---	5, 070, 263. 12
Miscellaneous collections-----	120, 645. 65

Deposited to the credit of appropriation for
salaries, Office of Superintendent of Docu-
ments: Refunds-----

28. 86

 5, 190, 937. 63

1947

Deposited to the credit of appropriation for
public printing and binding:

Printing and binding for departments---	42, 147, 982. 40
Miscellaneous collections-----	443, 394. 28
Field Service Offices-----	4, 767, 697. 43

 47, 359, 074. 11

Deposited to miscellaneous receipts:

Damage to Government property-----	2, 201. 86
Refund of terminal-leave compensation--	612. 82
Reimbursement, excess cost over con- tract price-----	100. 00

 2, 914. 68

Special deposit account:

Telephone calls-----	85. 09
Collector, Internal Revenue (tax on travel)-----	4. 12
Speeches, etc-----	85, 285. 42

 85, 374. 63

 Total----- 52, 689, 233. 69

Table 4 is a statement of production by major items for the fiscal years 1945, 1946, and 1947. The principal increases in 1947 over 1946 were: Electrotypes, stereotypes, and matrices made, 7,173,176 square inches; postal cards printed, 561,047,400; money orders printed,

10,015,380; copies wire-stitched, 49,892,891; signatures gathered and covered, 12,013,244; sheets passed through ruling machine, 5,155,271; books sewed, 1,137,605; sheets perforated, 1,571,369.

The principal decreases in 1947 from the previous year were: Actual press impressions, 210,430,889; signatures gathered, 105,768,647; sheets tipped, 9,681,527; sheets indexed, 39,019,239; signatures sewed, 8,931,971; copies punched and drilled, 210,856,984; tablets made, 1,263,578.

Orders placed for commercial printing in 1947 decreased 1,629, or 17 percent, from the fiscal year 1946.

TABLE 4.—*Production of principal items entering into printing and binding in fiscal years 1945, 1946, and 1947—Main Office and Congressional Library Branch*

Item	Computation Unit	1945	1946	1947
Total charges for printing and binding.....		\$77,309,497.53	\$47,224,867.36	¹ \$53,009,753.69
Bills computed.....	Number	102,107	78,580	86,551
Electrotypes, stereotypes, and matrices....	Square inches	57,932,942	46,317,937	53,491,113
Postal cards printed.....	Number	2,386,933,000	2,309,892,200	2,870,939,600
Money orders printed.....	do	300,696,304	284,196,930	294,212,310
Actual impressions.....	do	1,407,132,607	1,075,904,802	865,473,913
Sheets folded.....	do	414,837,728	341,267,864	332,014,142
Signatures gathered.....	do	260,697,001	347,681,854	241,913,207
Tips made.....	do	51,885,482	49,086,405	39,404,878
Copies wire-stitched.....	do	94,501,072	84,007,650	133,900,541
Books rounded and backed.....	do	3,081,864	2,666,181	1,290,007
Copies covered.....	do	9,671,920	² 2,877,910	3,058,987
Signatures gathered and covered.....	do		36,956,778	48,970,022
Impressions stamped.....	do	4,116,696	3,718,376	2,536,600
Books cased in.....	do	4,493,575	2,977,242	1,430,401
Books indexed.....	do	1,588,634	² 20,157	6,327
Sheets indexed.....	do		55,531,525	16,512,286
Sheets passed through ruling machine.....	do	59,904,763	27,918,452	33,073,723
Signatures sewed.....	do	54,054,462	78,917,559	69,985,588
Sections sewed.....	do	363,560	170,585	140,763
Books sewed.....	do	6,875,160	² 717,680	1,855,285
Copies punched and drilled.....	do	1,355,994,034	1,024,395,975	813,538,991
Impressions perforated.....	do	3,620,950		
Sheets perforated.....	do	5,465,256	8,507,234	10,078,603
Tablets made.....	do	16,806,084	7,424,475	6,160,897
Miscellaneous rebinding.....	do	829,716	689,279	721,640
Orders placed for commercial printing.....	do	17,983	9,503	7,874

¹ This amount does not include the value of assets purchased in prior fiscal years and allocated to cost this fiscal year.

² Decrease resulted from change in method of reporting.

Table 5 shows the charges for printing and binding and blank paper and supplies furnished during the fiscal year 1947 and the service for which the work was done. The grand total charges increased \$5,784,-886.33 (12.2 percent) over those for the fiscal year 1946. The principal increases are: Veterans' Administration, \$3,967,464.04 (364.7 percent);

Post Office Department, \$930,094.43 (36.4 percent); Agriculture Department, \$586,135.12 (47.9 percent). Printing and binding for Congress increased \$1,190,884.55 (28.4 percent). The principal decrease is War Department, \$5,405,204.89 (39.3 percent). The charges for War Assets Administration amounted to \$3,693,936.26.

TABLE 5.—Charges for work and to whom delivered during fiscal year ended June 30, 1947

Congress:

Congressional Record.....	\$1, 239, 865. 28
Miscellaneous publications.....	808, 453. 29
Miscellaneous printing and binding.....	529, 748. 13
Publications for international exchange.....	32, 376. 62
Franked envelopes and document franks...	124, 443. 94
Bills, resolutions, and amendments.....	503, 404. 91
Committee reports.....	188, 839. 41
Documents.....	255, 124. 03
Hearings.....	1, 062, 377. 98
Federal Register.....	505, 366. 41
Supplement to the Code of Federal Regula- tions.....	125, 000. 00

Total.....	\$5, 375, 000. 00
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Private orders by Members of Congress:

Documents, reports, bills, etc.....	21, 435. 94
Speeches.....	67, 642. 89
Other private orders.....	3, 221. 84
Congressional repay.....	2, 860. 37
Superintendent of Documents.....	2, 097, 496. 29
Library of Congress.....	790, 677. 40
Agriculture.....	1, 807, 935. 22
Commerce.....	1, 638, 226. 55
Interior.....	672, 190. 23
Justice.....	580, 096. 80
Labor.....	573, 019. 40
Navy.....	5, 414, 748. 72
Post Office.....	3, 482, 731. 41
State.....	1, 087, 098. 76
Treasury.....	4, 725, 677. 00
War.....	8, 318, 747. 82
Administrative Office of the United States Courts.....	72, 473. 53
Alien Property Custodian.....	8, 511. 84
American Battle Monuments Commission.....	194. 89
American Committee for the Protection and Salvage of Historical Monuments in Europe.....	4, 028. 72
Atomic Energy Commission.....	700. 93
Board of Governors, Federal Reserve System.....	738. 47
Bureau of the Budget.....	179, 934. 01
Central Intelligence Group.....	49, 350. 78
Civil Service Commission.....	315, 996. 16

TABLE 5.—Charges for work and to whom delivered during fiscal year ended June 30,
1947—Continued

Civilian Production Administration.....	\$164, 837. 67
Committee on Fair Employment Practice.....	5. 70
Commission of Fine Arts.....	276. 92
Council of Economic Advisers.....	2, 893. 17
Court of Claims.....	30, 549. 35
Court of Customs and Patent Appeals.....	7, 825. 37
District of Columbia Government.....	106, 994. 25
Export-Import Bank of Washington.....	5, 208. 64
Farm Credit Administration.....	26, 721. 58
Farm Security Agency.....	25, 360. 27
Farmers Home Administration.....	65, 978. 92
Federal Communications Commission.....	44, 127. 52
Federal Deposit Insurance Corporation.....	13, 173. 77
Federal Loan Agency.....	132, 734. 39
Federal Power Commission.....	49, 534. 44
Federal Security Agency.....	873, 221. 67
Federal Trade Commission.....	43, 184. 81
Federal Works Agency.....	150, 384. 19
Foreign Economic Administration.....	304. 08
General Accounting Office.....	274, 514. 71
Government Printing Office, Field Service Office.....	350, 301. 60
Interstate Commerce Commission.....	204, 877. 29
National Academy of Science.....	355. 12
National Advisory Committee for Aeronautics.....	31, 983. 55
National Archives.....	8, 574. 44
National Capital Housing Authority.....	2, 644. 91
National Capital Park and Planning Commission.....	92. 37
National Forest Reservation Commission.....	830. 85
National Gallery of Art.....	7, 206. 23
National Housing Agency.....	744, 772. 51
National Labor Relations Board.....	147, 931. 50
National Mediation Board.....	5, 599. 29
Office of Civilian Defense.....	6. 50
Office of Defense Transportation.....	7, 998. 50
Office of Economic Stabilization.....	2. 70
Office of Government Reports.....	1, 105. 87
Office of Housing Expediter.....	8, 028. 79
Office of Price Administration.....	905, 973. 53
Office of Scientific Research and Development.....	267. 95
Office of Selective Service Records.....	218. 95
Office of Temporary Controls.....	798, 850. 63
Office of War Mobilization and Reconversion.....	17, 007. 36
Panama Canal.....	96, 826. 20
Pan American Union.....	54, 767. 74

TABLE 5.—Charges for work and to whom delivered during fiscal year ended June 30, 1947—Continued

Patent Office.....	\$622, 597. 30
Petroleum Administration for War.....	129. 45
Philippine Alien Property Administration.....	36. 59
Philippine War Damage Commission.....	29, 063. 75
Price Decontrol Board.....	312. 33
Railroad Retirement Board.....	76, 768. 07
Securities and Exchange Commission.....	58, 214. 11
Selective Service System.....	84, 809. 67
Smaller War Plants Corporation.....	177. 30
Smithsonian Institution.....	125, 175. 20
Supreme Court of the United States.....	64, 826. 59
Tax Court of the United States.....	11, 906. 46
Tennessee Valley Authority.....	78, 701. 77
United Nations.....	183, 399. 51
U. S. Maritime Commission.....	188, 533. 62
U. S. Tariff Commission.....	17, 856. 28
Veterans' Administration.....	5, 055, 211. 57
War Assets Administration.....	3, 693, 936. 26
War Shipping Administration.....	1, 670. 07
White House.....	11, 636. 02
Total.....	53, 009, 753. 69

Table 6 is a statement giving the details of production costs for each section of the Office, exclusive of the Office of the Superintendent of Documents, grouped under the headings of compensation (including salaries, wages, leave, and holiday pay in the production sections); materials, supplies, equipment, and machinery; maintenance and upkeep; administrative and clerical expenses; and other major items entering into the cost of production.

Table 7 has been broken down into three separate tables showing work produced by the Government Printing Office, work produced by outside contractors, and all work produced. These are itemized statements of the classes of work charged for during the fiscal year 1947. There were 13,953,029,924 copies of printed or bound material charged for during the fiscal year, an increase of 1,085,886,493 (8.4 percent). The charge for paper stock was \$18,289,302.12, an increase of \$2,798,498.43 (18 percent). The charge for work produced in part by outside contractors was \$18,386,922.31, a decrease of \$2,461,564.72 (11.8 percent). The grand total charges were \$53,009,753.69, an increase of \$5,784,886.33 (12.2 percent).

TABLE 6.—Statement of cost of production within the Office, exclusive of Public Documents Division, for the fiscal year 1947

Section (manufacturing center)	Total compen- sation	Material, supplies, equipment and machinery	Maintenance and upkeep	General overhead	Paper stock issued, printing, illustrations	Miscellaneous and inter- section work		Total cost of production
						Debit	Credit	
Job Composing.....	\$588, 248. 24	\$9, 008. 27	\$4, 131. 34	\$147, 978. 39	-----	\$38, 866. 61	\$11, 150. 87	\$777, 081. 98
Hand.....	761, 111. 70	6, 372. 81	8, 282. 77	179, 090. 93	-----	33, 129. 76	1, 344. 52	987, 249. 45
Linotype.....	1, 259, 545. 42	57, 986. 25	14, 480. 50	347, 651. 59	-----	41, 580. 87	5. 83	1, 721, 238. 80
Monotype.....	1, 610, 694. 17	78, 189. 88	23, 360. 52	437, 628. 31	-----	73, 671. 20	131, 835. 24	2, 091, 708. 84
Proof.....	1, 209, 082. 84	781. 80	2, 917. 20	359, 778. 37	-----	237. 78	330. 24	1, 572, 467. 75
Patents.....	450, 165. 15	19, 057. 23	5, 566. 70	127, 960. 84	-----	11, 163. 23	6, 296. 69	607, 616. 46
Supreme Court Unit.....	18, 319. 67	4, 965. 79	2, 566. 78	2, 572. 28	-----	1, 064. 55	-----	29, 589. 07
Library Composing Branch.....	177, 278. 21	10, 783. 31	3, 082. 74	19, 478. 25	-----	4, 568. 08	-----	215, 190. 59
Platemaking: Molding, Stereotyping, and Finish- ing.....	512, 430. 56	90, 178. 83	32, 783. 93	209, 115. 46	-----	34, 195. 34	15, 785. 80	862, 918. 32
Photoengraving.....	270, 274. 01	76, 727. 88	9, 963. 66	124, 376. 75	-----	460. 14	238. 83	481, 563. 61
Press: Job, Book, and Offset.....	3, 269, 573. 94	326, 049. 22	127, 383. 52	704, 559. 75	-----	13, 830. 72	4, 921. 09	4, 496, 476. 06
Money Order.....	84, 809. 93	11, 337. 67	2, 236. 14	26, 194. 67	-----	1, 728. 66	-----	126, 307. 07
Postal Card.....	247, 690. 00	121, 663. 11	14, 104. 51	74, 544. 77	-----	3, 602. 66	-----	461, 565. 05
Pamphlet.....	2, 041, 442. 64	90, 696. 88	61, 920. 67	450, 182. 58	-----	371. 30	633. 98	2, 643, 980. 09
Blank.....	717, 817. 63	65, 895. 75	21, 852. 12	181, 412. 06	-----	528. 15	1, 314. 37	985, 921. 34
Book.....	858, 200. 96	100, 355. 12	19, 196. 46	242, 833. 54	-----	1, 224. 67	10, 160. 09	1, 211, 710. 66
Cutting and Packing.....	312, 514. 32	47, 479. 46	13, 319. 19	81, 837. 69	-----	1, 103. 60	456. 79	455, 797. 47
Library Binding Branch.....	248, 764. 97	4, 144. 58	3, 186. 13	31, 863. 37	-----	317. 89	89. 11	288, 187. 83
Details chargeable.....	86, 203. 07	756. 99	41. 77	12, 307. 27	-----	72. 70	-----	99, 381. 80
Ink.....	26, 630. 59	90, 880. 07	1, 666. 30	4, 705. 71	-----	93. 24	69, 375. 20	54, 000. 71
Roller and Glue.....	17, 196. 26	33, 922. 51	2, 118. 17	3, 580. 22	-----	32. 04	58, 563. 28	1, 814. 08
Metal.....	32, 852. 45	26, 753. 86	8, 391. 40	9, 197. 87	-----	122. 97	76, 825. 37	523. 18
Stores.....	496, 989. 03	30, 086. 09	80, 395. 44	147, 015. 93	-----	11, 450, 997. 68	167, 282. 15	2, 038, 202. 02
Paper stock used on printing and binding jackets.....	-----	-----	-----	-----	\$18, 247, 383. 59	-----	-----	18, 247, 383. 59
Materials used on printing and binding jackets.....	-----	-----	-----	-----	261, 284. 13	-----	-----	261, 284. 13
Outside printing and illustrations.....	-----	-----	-----	-----	12, 710, 352. 12	-----	-----	12, 710, 352. 12

¹ Includes freight, rent, storage, etc.

TABLE 6.—Statement of cost of production within the Office, exclusive of Public Documents Division, for the fiscal year 1947—Continued

Section (manufacturing center)	Total compen- sation	Material, supplies, equipment and machinery	Maintenance and upkeep	General overhead	Paper stock and material issued, outside printing, illustrations	Miscellaneous and inter- section work		Total cost of production
						Debit	Credit	
Miscellaneous items.....			\$26,827.84					\$26,827.84
Miscellaneous service for Superintendent of Docu- ments other than printing and binding.....		\$43,609.39	72,020.20	\$15,363.73				130,993.32
Work in administrative sections chargeable to printing and binding jackets.....								108,401.60
Total—Central Office.....	\$15,297,885.76	1,347,582.75	561,626.00	4,001,836.33	\$31,219,019.84	\$1,712,963.84	\$556,609.45	53,692,706.67
Field Service Offices (obligation basis).....								4,943,995.01
GPO—Department of State Service Office (5 months).....								58,716.90
Grand total.....								58,695,418.58

TABLE 7.—Itemized statement of classes and charges for work completed during fiscal year 1947

ALL WORK PRODUCED

Class of work	Number of copies	Number of type pages	Number of publications bound	Composition, presswork, plating, folding, binding, illustrations, and miscellaneous	Paper	Author's alterations	Rush work	Outside printing	Total charges
Publications:									
Smaller than octavo (under 5½ by 8½)	69,073, 434	83,033	1, 135, 299	\$582,304.94	\$575,416.00	\$11,719.42	\$92.25	\$701,800.69	\$1,871,333.30
Octavo (5½ by 8½ to 6½ by 9½)	131,866,851	739,783	929,123	5,407,744.96	1,551,693.22	254,448.02	251,321.79	1,655,737.64	9,120,846.13
Royal octavo (6½ by 9½ to 8 by 11)	79,237,004	296,782	117,727	2,574,606.96	1,226,531.17	102,228.11	99,404.50	1,963,433.31	5,966,264.05
Quarto (over 8 by 11)	45,449,683	76,941	82,822	1,254,833.40	398,130.66	53,942.77	20,344.85	491,729.93	2,218,981.61
Federal Register	4,867,982	13,324		408,722.77	44,436.37	25,119.78	27,087.49		505,366.41
Supplement to Code of Federal Regulations	9,000	6,500	9,000	119,300.00	5,700.00				125,000.00
Congressional Record	6,313,605	52,877	77,999	951,314.24	147,307.92	22,488.93	118,754.19		1,239,865.28
Official Gazette	350,645	9,241		93,419.23	31,159.90				124,579.13
Patent specifications	3,631,400	77,511		438,110.41	15,888.52				453,998.93
Money orders	1,462,776			117,430.46	138,651.44				256,081.90
Postal cards	2,777,900,000			392,315.18	1,148,880.07				1,541,195.25
Air-mail-letter sheets	9,025,000			19,915.24	26,588.01				46,506.25
Catalog cards	42,583,993			225,022.54	75,057.47	3,115.77			303,195.78
Letterheads and envelopes	391,870,479			304,794.91	554,297.89	640.50		60,055.23	919,788.53
Blank paper ordered on requisitions				148,744.03	1,369,949.16				1,518,693.19
Blanks, notices, etc.	8,558,518,175			4,044,109.74	5,595,118.85	21,744.70		2,591,439.65	12,252,412.94
Tabulating cards	986,396,080			22,444.50	9,528.68			669,313.21	701,286.39
Circulars, schedules, etc.	669,059,375			435,361.28	581,515.93	11,588.21	452.50	1,526,542.65	2,555,460.57
Blankbooks, tablets, etc.	4,579,373			704,789.25					704,789.25
Blankbooks made to order	5,514,217			354,055.24	204,305.42	981.94		8,497.12	567,839.72
Ink				43,389.13					43,389.13
Binding documents, newspapers, etc.	140,731			748,912.94	478.05	21.17			749,412.16
Binders	132,253			35,447.74	2,167.23				37,614.97
Miscellaneous				599,093.71	72,235.45	11,498.91	1,209.23	473,801.60	1,157,838.90
Posters and maps	17,586,394			94,008.76	142,285.41	359.45		199,999.82	436,633.44
Snap-out and continuous forms	147,491,474			32,744.20	3,259.82	80.27		2,699,816.13	2,735,900.42
Blank paper				486,640.58	4,368,819.48				4,855,460.06
Total	13,953,029,924	1,355,992	2,351,970	20,639,579.24	18,289,302.12	519,978.55	518,726.80	13,042,166.98	53,009,753.69

TABLE 7.—*Itemized statement of classes and charges for work completed during fiscal year 1947*—Continued

PRODUCED BY GOVERNMENT PRINTING OFFICE

Class of work	Number of copies	Number of type pages	Number of publica- tions bound	Composition, presswork, plating, folding, binding, illus- trations, and miscellaneous	Paper	Author's alterations	Rush work	Outside printing	Total charges
Publications:									
Smaller than octavo (under 5½ by 8½)	40,322,493	43,239	17,355	\$530,420.83	\$271,381.52	\$11,670.81	\$92.25	-----	\$813,565.41
Octavo (5½ by 8½ to 6½ by 9½)	88,043,472	615,082	887,302	5,277,903.90	1,135,744.43	243,734.98	251,321.79	\$22,337.68	6,931,042.78
Royal octavo (6½ by 9½ to 8 by 11)	41,001,252	186,517	79,629	2,406,514.24	605,293.14	101,150.46	99,464.50	47,129.35	3,250,551.69
Quarto (over 8 by 11)	39,093,333	53,102	61,490	1,175,500.31	295,158.11	52,467.76	20,344.85	32,847.15	1,576,318.18
Federal Register	4,867,982	13,324	-----	408,722.77	44,436.37	25,119.78	27,087.49	-----	505,366.41
Supplement to Code of Federal Regula- tions	9,000	6,500	9,000	119,300.00	5,700.00	-----	-----	-----	125,000.00
Congressional Record	6,313,605	52,877	77,999	951,314.24	147,307.92	22,468.93	118,754.19	-----	1,230,865.28
Official Gazette	350,645	9,241	-----	93,419.23	31,159.90	-----	-----	-----	124,579.13
Patent specifications	3,631,400	77,511	-----	438,110.41	15,888.52	-----	-----	-----	453,998.93
Money orders	1,462,776	-----	-----	117,430.46	139,651.44	-----	-----	-----	256,081.90
Postal cards	2,777,900,000	-----	-----	392,315.18	1,148,880.07	-----	-----	-----	1,541,195.25
Air-mail-letter sheets	9,025,000	-----	-----	19,918.24	26,588.01	-----	-----	-----	46,506.25
Catalog cards	42,583,993	-----	-----	225,022.54	75,057.47	3,115.77	-----	-----	303,195.78
Letterheads and envelopes	296,041,079	-----	-----	298,576.76	412,056.68	640.50	-----	915.16	712,189.10
Blank paper ordered on requisitions	-----	-----	-----	148,744.03	1,369,949.16	-----	-----	-----	1,518,693.19
Blanks, notices, etc.	4,189,363,263	-----	-----	3,825,031.35	3,071,751.32	19,066.44	-----	21,332.16	6,937,181.27
Tabulating cards	218,000	-----	-----	5,973.94	8,709.66	-----	-----	-----	14,683.60
Circulars, schedules, etc.	144,432,734	-----	-----	314,828.95	146,732.36	7,753.30	452.50	5,432.09	475,199.20
Blankbooks, tablets, etc.	4,579,373	-----	-----	704,789.25	-----	-----	-----	-----	704,789.25
Blankbooks made to order	5,514,217	-----	-----	353,831.51	204,305.42	981.94	-----	-----	559,118.87
Ink	-----	-----	-----	43,389.13	-----	-----	-----	-----	43,389.13
Binding documents, newspapers, etc.	140,731	-----	-----	748,912.94	478.05	21.17	-----	-----	749,412.16
Binders	132,253	-----	-----	35,447.74	2,167.23	-----	-----	-----	37,614.97
Miscellaneous	-----	-----	-----	597,062.81	64,064.12	11,482.03	1,209.23	2,050.71	675,868.90

Maps and posters.....	6, 587, 270	-----	-----	84, 045.95	65, 916.49	278.49	-----	3, 139.70	153, 380.63
Snap-out and continuous forms.....	549, 330	-----	-----	7, 302.04	2, 201.75	80.27	-----	-----	9, 584.06
Blank paper.....	-----	-----	-----	486, 040.58	4, 368, 819.48	-----	-----	-----	4, 855, 400.06
Total.....	7, 701, 163, 201	1, 057, 393	1, 132, 775	19, 810, 469.33	13, 653, 398.62	500, 052.63	518, 726.80	135, 184.00	34, 622, 831.38

PRODUCED IN PART BY OUTSIDE CONTRACTORS

Publications:									
Smaller than octavo (5½ by 8½).....	28, 750, 941	39, 794	1, 117, 944	\$51, 884.11	\$304, 034.48	\$48.61	-----	\$701, 800.69	\$1, 057, 767.89
Octavo (5½ by 8½ to 6½ by 9½).....	43, 823, 379	124, 701	41, 821	129, 840.96	415, 848.79	10, 713.64	-----	1, 633, 399.96	2, 189, 803.35
Royal octavo (6½ by 9½ to 8 by 11).....	38, 235, 752	110, 265	38, 098	168, 092.72	621, 238.03	1, 077.65	-----	1, 916, 303.96	2, 706, 712.36
Quarto (over 8 by 11).....	6, 356, 350	23, 839	21, 332	79, 333.09	102, 972.55	1, 475.01	-----	458, 882.78	642, 663.43
Letterheads and envelopes.....	95, 829, 400	-----	-----	6, 218.15	142, 241.21	-----	-----	59, 140.07	207, 599.43
Blanks, notices, etc.....	4, 369, 154, 912	-----	-----	219, 078.39	2, 523, 367.53	2, 678.26	-----	2, 570, 107.49	5, 315, 231.67
Tabulating cards.....	986, 178, 080	-----	-----	16, 470.56	819.02	-----	-----	669, 313.21	686, 602.79
Circulars, schedules, etc.....	524, 626, 641	-----	-----	120, 532.33	434, 783.57	3, 834.91	-----	1, 521, 110.56	2, 080, 261.37
Blankbooks made to order.....	-----	-----	-----	223.73	-----	-----	-----	8, 497.12	8, 720.85
Miscellaneous.....	-----	-----	-----	2, 030.90	8, 171.33	16.88	-----	471, 750.89	481, 970.00
Maps and posters.....	11, 969, 124	-----	-----	9, 962.81	76, 368.92	80.96	-----	196, 860.12	283, 272.81
Snap-out and continuous forms.....	146, 942, 144	-----	-----	25, 442.16	1, 058.07	-----	-----	2, 699, 816.13	2, 726, 316.36
Total.....	6, 251, 866, 723	298, 599	1, 219, 195	829, 109.91	4, 630, 903.50	19, 925.92	-----	12, 906, 982.98	18, 386, 922.31

The value of property received as a result of the transfer of the Duplicating and Distribution Branch of the Procurement Division, Treasury Department, to the Government Printing Office and used to establish the field offices is \$974,401.67.

Surplus property valued at \$3,427,572.10 was received from various Government agencies. The cost of putting this property in condition for use or sale was \$383,545.52, leaving a net value of \$3,044,026.58.

Surplus property received

Paper, envelopes, and cartons.....	\$3, 299, 482. 85	
Less cost of putting in condition for use or sale (included in total cost of Central Office).....	383, 302. 62	\$2, 916, 180. 23
	<hr/>	
Standard forms.....	22, 404. 92	
Less cost of putting in condition for sale (included in total cost of Central Office).....	242. 90	22, 162. 02
	<hr/>	
Equipment and supplies.....		105, 684. 33
Net value.....		<hr/> 3, 044, 026. 58

Table 8 gives the details of the inventory of stock and machinery and equipment on hand in the Central Office at the close of the fiscal year 1947. The value of paper, envelopes, material, and supplies was \$7,573,684.51, as compared with \$4,517,261.39 in 1946, an increase of \$3,056,423.12. The value of machinery and equipment at the close of the fiscal year 1947 was \$6,661,532.24, as compared with \$6,471,750.29 in 1946, an increase of \$189,781.95. The total of stock of all kinds and machinery and equipment on hand at the close of the fiscal year 1947 was \$14,235,216.75, as compared with \$10,989,011.68 in 1946, an increase of \$3,246,205.07.

TABLE 8.—*Inventory of quantity and cost of paper and envelopes, supplies, machinery, and equipment on hand June 30, 1947*

Item	Pounds	Cost
Paper and envelopes:		
Printing.....	11, 252, 750	\$1, 002, 822. 15
Mimeograph.....	17, 237, 352	1, 004, 316. 42
Safety.....	64, 648	10, 992. 48
Writing.....	11, 092, 706	1, 276, 582. 20
Map.....	106, 314	18, 263. 54
Manifold.....	2, 561, 162	471, 353. 88
Bond.....	3, 696, 117	696, 666. 80
Ledger.....	3, 070, 251	557, 403. 05
Index.....	2, 251, 302	457, 348. 46
Cover.....	633, 391	86, 400. 63
Manila.....	493, 060	51, 930. 66
Kraft.....	689, 554	44, 554. 50
Tagboard.....	52, 448	5, 900. 40
Cardboard.....	378, 861	34, 406. 39

TABLE 8.—*Inventory of quantity and cost of paper and envelopes, supplies, machinery, and equipment on hand June 30, 1947—Continued*

Item	Pounds	Cost
Paper and envelopes—Continued		
Bristol board.....	4, 634, 070	\$426, 260. 42
Newsboard.....	578, 068	32, 676. 31
Binders' board.....	663, 611	36, 173. 25
Miscellaneous.....	1, 719, 831	265, 999. 27
Tags.....		3, 044. 40
Cartons.....		182, 828. 17
Envelopes.....		121, 411. 05
Total.....	61, 175, 496	6, 787, 334. 43
Material and supplies:		
Miscellaneous supplies.....		550, 900. 30
Book cloth.....		42, 502. 95
Ink ingredients.....		38, 309. 65
Buckram.....		73, 805. 84
Leather.....		8, 257. 01
Gold leaf.....		6, 989. 47
Imitation leather.....		65, 584. 86
Total, material and supplies.....		786, 350. 08
Total paper and envelopes and material and supplies.....		7, 573, 684. 51
Machinery and equipment.....		6, 661, 532. 24
Grand total.....		14, 235, 216. 75

Table 9 shows the number of copies of publications printed in 1947 for Congress, executive departments, and independent Government establishments. The fiscal year 1947 shows a decrease of 369,610,078 copies of publications (52 percent) over 1946.

TABLE 9.—*Publications furnished Congress, executive departments, and independent Government establishments during the fiscal year 1947*

	<i>Number of copies</i>
Congress (not including Congressional Record).....	13, 751, 120
Congressional Record.....	6, 313, 605
Federal Register.....	4, 867, 982
Supplement to Code of Federal Regulations.....	9, 000
Speeches and Congressional Orders.....	20, 581, 220
Superintendent of Documents.....	19, 177, 657
Library of Congress.....	237, 585
Department of Agriculture.....	28, 534, 867
Department of Commerce.....	3, 599, 214
Department of the Interior.....	3, 247, 167
Department of Justice.....	584, 165
Department of Labor.....	6, 006, 438
Navy Department.....	35, 996, 798
Post Office Department.....	7, 293, 900
State Department.....	6, 334, 967
Treasury Department.....	8, 854, 912
War Department.....	96, 995, 268
Administrative Office of the United States Courts.....	240, 618
Alien Property Custodian.....	2, 550

TABLE 9.—*Publications furnished Congress, executive departments, and independent Government establishments during the fiscal year 1947—Continued*

	<i>Number of copies</i>
American Battle Monuments Commission.....	1
American Committee for the Practice and Salvage of Historical Monuments in Europe.....	500
Board of Governors, Federal Reserve System.....	5, 258
Bureau of the Budget.....	370, 344
Central Intelligence Group.....	115
Civil Service Commission.....	5, 011, 051
Civilian Production Administration.....	12, 174
Committee on Fair Employment Practice.....	1
Commission of Fine Arts.....	702
Council of Economic Advisers.....	16, 400
Court of Claims.....	45, 383
Court of Customs and Patent Appeals.....	1, 149
District of Columbia government.....	78, 758
Export-Import Bank of Washington.....	6, 043
Farm Credit Administration.....	266, 761
Farm Security Agency.....	55, 752
Farmers Home Administration.....	2, 532
Federal Communications Commission.....	44, 755
Federal Deposit Insurance Corporation.....	16, 446
Federal Loan Agency.....	651, 948
Federal Power Commission.....	68, 870
Federal Security Agency.....	8, 763, 972
Federal Trade Commission.....	32, 372
Federal Works Agency.....	260, 155
Foreign Economic Administration.....	2, 849
General Accounting Office.....	278, 309
Interstate Commerce Commission.....	353, 003
National Academy of Science.....	3, 000
National Advisory Committee for Aeronautics.....	7, 576
National Archives.....	12, 022
National Capital Housing Authority.....	994
National Capital Park and Planning Commission.....	250
National Forest Reservation Commission.....	3, 800
National Gallery of Art.....	164, 047
National Housing Agency.....	1, 877, 276
National Labor Relations Board.....	35, 104
National Mediation Board.....	8, 464
Office of Defense Transportation.....	702
Office of Economic Stabilization.....	6
Office of Government Reports.....	10, 000
Office of Housing Expediter.....	132, 500
Office of Price Administration.....	15, 739, 281
Office of Scientific Research and Development.....	76
Office of Temporary Controls.....	2, 606, 813
Office of War Mobilization and Reconversion.....	300, 084
Panama Canal.....	35, 360
Pan American Union.....	150, 684

TABLE 9.—*Publications furnished Congress, executive departments, and independent Government establishments during the fiscal year 1947—Continued*

	<i>Number of copies</i>
Patent Office.....	3, 960, 662
Petroleum Administration for War.....	7, 941
Philippine War Damage Commission.....	1, 808
Railroad Retirement Board.....	2, 276
Securities and Exchange Commission.....	95, 000
Selective Service System.....	3, 035, 629
Smaller War Plants Corporation.....	200
Smithsonian Institution.....	97, 586
Supreme Court of the United States.....	257, 282
Tax Court of the United States.....	72, 784
Tennessee Valley Authority.....	39, 867
U. S. Maritime Commission.....	899, 651
U. S. Tariff Commission.....	25, 983
Veterans' Administration.....	24, 935, 964
War Assets Administration.....	7, 300, 502
War Shipping Administration.....	13, 000
White House.....	48
Total.....	340, 808, 858

Table 10 is a comparative statement of the charges for work delivered during the fiscal years 1938 to 1947, inclusive. The number of copies of printed matter increased 120 percent during the last 5 years, and paper used increased 146 percent. The grand total charges, including blank paper and supplies furnished, increased 148 percent during this 5-year period.

TABLE 10.—*Comparative statement of charges for work delivered during fiscal years 1938 to 1947, inclusive*

Fiscal year	Number of copies	Charges for composition, plating, press-work, binding, author's alterations, and rush work	Charges for paper	Total charges
1938.....	6, 524, 377, 197	\$12, 307, 059. 03	\$5, 652, 257. 03	\$17, 959, 316. 06
1939.....	6, 599, 935, 832	12, 773, 810. 78	5, 464, 234. 32	18, 238, 045. 10
1940.....	7, 233, 642, 096	14, 137, 374. 33	6, 012, 829. 39	20, 150, 203. 72
1941.....	7, 563, 876, 277	19, 484, 952. 91	9, 108, 620. 90	28, 593, 573. 81
1942.....	12, 001, 023, 577	27, 617, 164. 72	19, 073, 179. 18	46, 690, 343. 90
Total, 1938 to 1942, inclusive.....	39, 922, 854, 979	86, 320, 361. 77	45, 311, 120. 82	131, 631, 482. 59
1943.....	16, 310, 148, 973	51, 179, 404. 04	26, 657, 782. 50	77, 837, 186. 54
1944.....	22, 869, 414, 943	46, 482, 387. 74	25, 109, 652. 61	71, 592, 040. 35
1945.....	22, 016, 984, 936	51, 374, 969. 65	25, 934, 527. 88	77, 309, 497. 53
1946.....	12, 867, 143, 431	31, 734, 063. 67	15, 490, 803. 69	47, 224, 867. 36
1947.....	13, 952, 399, 570	34, 720, 451. 57	18, 289, 302. 12	53, 009, 753. 69
Total, 1943 to 1947, inclusive.....	88, 016, 091, 853	215, 491, 276. 67	111, 482, 068. 80	326, 973, 345. 47
Grand total, 1938 to 1947, inclusive.....	127, 938, 946, 832	301, 811, 638. 44	156, 793, 189. 62	458, 604, 828. 06
Percentage of increase, 5-year period 1943-47 over 1938-42.....	120	150	146	148

EMPLOYEE RELATIONS, ACTIVITIES, AND PROBLEMS

PERSONNEL DIVISION

The continuing and most difficult problem of the Personnel Division is the recruitment of qualified journeymen craftsmen. Among the factors contributing to the difficulty are a general shortage in the printing crafts and lack of housing in Washington. The Office will continue to work with the Civil Service Commission and other agencies to solve this problem. With the return of peacetime conditions, the Commission is holding examinations and, as registers are established, conditions should improve.

Another big task is the conversion of war-service and temporary-indefinite employees to permanent status as they qualify through competitive examinations.

There were 1,327 appointments and 980 separations from Office rolls during the fiscal year. These figures include 999 appointments by transfer of employees in the 15 field offices which were operated by the Procurement Division of the Treasury Department in the previous year. Appointment of 33 employees of the State Department printing plant transferred to the Government Printing Office are also included. During the year, 569 employees resigned, 113 retired, and 161 were separated by corrective action because of absenteeism, misconduct, or failure to meet Office requirements. Deaths accounted for removal of 33 names from the rolls.

As of June 30, 1947, there were 7,955 employees on the rolls, including 983 field-office employees, compared with 7,687 at the end of the previous year, when the field offices were not under Government Printing Office control. Records of the Division show 7,627 personnel actions processed during the year in contrast to only 2,224 in 1939. Turn-over for the year was at the rate of 17.54 percent.

The Division interviewed 13,156 persons and received 28,392 letters regarding personnel matters. It has been relieved of the heavy burden of recruitment it had to assume during the war years, when turn-over was so heavy that 11,559 new employees had to be enrolled between the closing months of 1939 and September 1945.

Until 1939 there was no division in the Government Printing Office devoted wholly to the personal factors involved in production of printing.

In the wake of publicity relative to more amicable employer-employee relationships in industry, President Roosevelt on June 24, 1938, issued Executive Order 7916 directing that each Federal agency establish a Personnel Division, to be headed by a Director of Personnel,

qualified by training and experience to supervise agency functions of appointment, placement, efficiency ratings, in-service training, personnel management, and grievance-settlement procedures; act as liaison officer between his agency and the Civil Service Commission; and serve as a member of the Council of Personnel Administration.

A Director of Personnel for the Government Printing Office was appointed February 1, 1939, from a register established by the Civil Service Commission as a result of a Nation-wide open competitive examination. The new official took general supervision over personnel procedures. Personnel clerical work was then being carried out by a staff of four clerks, with the larger clerical and stenographic force of the Chief Clerk available, upon call, whenever personnel procedures required additional assistants. The printing plant in 1939 was seriously overcrowded, but a new building was under construction. The introduction of new personnel procedures was postponed until completion of the new building afforded space to establish and make operative the procedures outlined in the President's order, so far as they would conform to title 44 of the United States Code and further the production needs of the Government Printing Office. The Personnel Division contemplated by the order would include several sections, namely, Office of the Director of Personnel; Board of Wage and Salary Review; Efficiency Rating Review Board; Grievance Board; Medical, Safety, and Health Section; Recruitment, Selection, and Placement Section; Appointment, Retirement, and Records Section; Classification and Organizational Survey Section; Employee Relations and Welfare Section; and Training Section.

A few of these functions were already being carried out to the extent then generally practiced by Federal agencies. There was a Board of Discipline to investigate cases of misconduct; efficiency ratings were issued annually and could be reviewed by the Efficiency Rating Review Board; preemployment physical examinations and first-aid treatment for injuries and illnesses were given by the Emergency Hospital Section; hourly employees had the right of collective bargaining, but annual employees were not under the Personnel Classification Act and the Office had no formal means for adjusting salary differences; personnel records were less detailed than at present; and there was no in-service training or promotion plan except the Apprentice School and a plan for trades helpers.

The new building was completed and occupied in 1940, and early in 1941 the contemplated personnel procedures began to take form. The tremendous expansion of governmental activities beginning in 1939, associated with the war and our possible entry into it, caused enormous demands for printed material, necessitating the hiring of many addi-

tional employees. The clerical staff engaged on personnel work was increased from time to time to keep pace with the increasing work. In January 1941, the Classification and Organizational Survey Section was established, and the position of classifier was created for the purpose of conducting surveys of individual jobs and of groups and classes of jobs to insure that rates of pay were fair, equitable, and in line with wage scales for similar work in other Federal agencies and in private industry. In May 1941, a Director of Training was added to the staff for the purpose of formulating in-service training programs and promotional policies.

To meet the manifest and growing needs of the Office, the Division of Personnel was placed under a full-time Director in 1945.

From 1939 through the war years, labor turn-over was highly abnormal. The posts of large numbers of employees entering the armed services had to be filled pending their return. As the manpower shortage increased and the labor market diminished, recruiting became more difficult and less satisfactory. Emphasis had to be placed on recruiting, hiring, and placing new, untrained personnel. The Civil Service Commission granted the Office authority to recruit directly. From the beginning of the war until the fall of Japan, the Personnel Division made every effort to cooperate with the armed forces and all other Government departments and agencies in releasing trained personnel. To do this, it was necessary to establish policies and procedures that would enable the Office to develop the employees who remained and to simplify work to the point where each individual increased his production. During this period, the principal function of the Personnel Division thus became the promotion of personnel utilization.

A full year's experience, with the appointment of a registered nurse as personnel relations representative, has shown the advantage of giving attention to the health and social problems of employees who take sick leave frequently or extensively or take leave without pay. Through home calls and Office interviews, it has been possible to improve the attendance of many employees; and in all but 11 out of the 270 absentee cases handled by the personnel relations representative, the employee returned to duty.

An Employee's Handbook is in preparation by the Personnel Division to serve as a basic training manual. Since the handbook is intended as a complete guide in all relations between the Office and its employees, officials and supervisors charged with administration of personnel policies are participating in preparing the text.

Consideration is being given to the compilation of a Foreman's Manual which will be devoted, primarily, to improving the supervisor's ability to deal effectively with subordinates in the interpretation of

Office rules and regulations as they are affected by production, and when and how to interpret them, so that every foreman will do the same thing in similar circumstances. Another purpose of the manual is to guide foremen in the preparation and administration of performance standards.

Objectives for the fiscal year 1948 include establishment of advanced personnel policies, aptitude tests and examinations, procedures leading to improved and closer supervision by officials, and increased quantity and quality of production by workers.

Plans and programs for training employees for better jobs will be expanded to stimulate promotion from within.

Training programs now in force are expected to add to the strength of the organization, not only at trade and craftsman levels but also by developing men and women of initiative and promise for key positions in the Government Printing Office for the years ahead. The latest studies and experiences in industry are being drawn upon; and whenever an industrial method or technique of value is discovered, it is adopted.

A comparison of the turn-over statistics of the Government Printing Office with similar figures from other departments of the Government indicates that turn-over is low and that it reflects a healthy condition in the Office.

Veterans Policy

The most salient feature of the Government Printing Office personnel program since the close of the war probably has been its consideration for returning veterans.

The Office has an active program for the readjustment and continuing welfare of returned and returning servicemen—not only adhering to the letter of the laws which define their rights and privileges but going far beyond mere adherence in an endeavor to carry out the spirit of the laws and to let veterans know that we are mindful and appreciative of their service to our country. There is nothing passive nor perfunctory about our policy; it has been of concrete benefit to all returned veterans, each of whom, upon reemployment here, has been reassigned to duty either in the same or a similar position or in a higher grade position in line with his added skills, and with appropriately higher pay. Each veteran of World War II who has returned to duty has been given every promotion or salary increase which would have accrued to him had he been steadily employed here instead of going away to war, plus such additional advancements to existing higher grade vacancies as the requirements of the service and his qualifications made feasible. Every one of our returned veterans is

today in a position equal or superior to that which he would have held had the war not intervened.

We are glad to have veterans return to their jobs. They had been originally appointed at a time when they could be selected in a free labor market, and they had been trained on Office work. When they left in large numbers for military service, the Office, like other industries, was forced to scrape the bottom of the barrel in the labor market to acquire sufficient help to meet greatly expanded production requirements. Much of the residue thus brought up was of a class not usually considered employable. It was, therefore, a great relief to be able to slough off that element when the veterans returned.

Here are statistics for veterans on Government Printing Office rolls:

Total number who left Office to enter armed forces.....	2, 495
Returned and presently employed.....	1, 130
Still on military leave.....	502
Reemployed but later left Office.....	492
Not requested reemployment here, owing to employment elsewhere, etc.;	
90-day eligibility period expired.....	308
Killed or died in military service.....	63
Not employed here prior to military service:	
Now on rolls.....	289
Left Office subsequent to appointment.....	174
Disabled and receiving disability compensation.....	139
Employed in our field offices.....	282
Carried on our rolls on extended leave without pay to attend school under	
GI bill of rights.....	17

Administration of our veterans policy is in the hands of officials who are themselves veterans and active members of veterans' organizations.

The position of Veterans' Coordinator was established in August 1945, when the first servicemen began returning to duty here. Our object was to insure a central and definite authority and source of assistance for veterans, with personalized service to each of them upon return to duty; to provide aid to veterans in channeling their problems through the proper line and staff divisions of the Office; and to render assistance in matters calling for contact with the Veterans' Administration or other Federal agencies.

Veterans of World War II are informed individually of Office policy at the time of their return to duty. Administrative and supervisory officials of the Office have been made familiar with our policy in order that they may cooperate; and they are cooperating.

The procedure carried out for each of the 1,622 veterans of World War II who so far have returned to duty here, and which will be carried

out for each of the remaining 502 employees yet to return from military leave, is:

The Veterans' Coordinator, the Director of Personnel, and the superintendent of the division in which the employee was or is to be assigned welcome and interview each returning veteran. They engage him in friendly conversation and ask him to relate the highlights of his war experiences, to discuss any problem he may have, to review his Government Printing Office experience, and to reveal any information which might assist in expediting his reassignment and readjustment. They explore possible placement opportunities with and for the veteran in the light of any added skills—or handicaps—he may have acquired since joining the armed forces. These factors are discussed with the veteran to the extent of complete understanding. Care is taken during this conversation to inform the veteran fully of his rights and privileges and their relationship to the production requirements of the Office. The Veterans' Coordinator also advises each veteran, in a general way, of his rights and privileges under the GI bill of rights, tells him how such rights and privileges may be obtained, and offers assistance in making any necessary contacts with other Federal agencies. The Veterans' Coordinator is available on a full-time basis, and veterans are encouraged to consult him whenever they wish assistance of the kind he is equipped to provide.

Following the welcoming interview, an inventory is made of the skills the veteran has acquired as a result of his military service. That inventory is used for upgrading him to any higher grade vacancy which may exist at the time of his return or which may occur in the future.

When the inventory of skills has been made and the veteran's preference as to type of work has been determined, he is interviewed by our Medical Director to determine whether he is physically qualified for the duties of the position to which he is to be assigned. The personal opinion of the veteran as to whether he is physically qualified is a factor in this decision, as the Office wishes to avoid assigning any veteran to a job which he feels he will be unable to hold.

For the handicapped, a whole new procedure of man-job matching techniques has been developed. All jobs in production divisions have been analyzed to determine the actual physical motions involved; all unessential physical requirements have been eliminated; and, with the close cooperation of our Medical Director, the streamlined requirements have been matched to the physical capabilities and limitations of the prospective incumbent. The physically handicapped veterans who have been placed through this procedure are now productively engaged in jobs on which their abilities are brought into use and their

particular physical limitations are not a factor in their work, nor a handicap or hazard to themselves, their coworkers, or the Office.

After returned veterans are reassigned to duty and given the benefits (promotions, salary increases, etc.) which accumulated to them during their absence, we follow up on their readjustment to the job and watch for opportunities to utilize any higher skills they may demonstrate or develop. Supervisors, including division heads, keep close check on their work and increased ability and efficiency in order that they may, wherever possible, be given preference when higher grade vacancies occur.

To insure that information on special and additional skills of each veteran would be kept current, all veterans were again asked in January 1947 to fill out a questionnaire listing and describing any additional skills or training they had acquired subsequent to their reemployment here and which they felt might qualify them for advancement. This procedure will be repeated at intervals in the future so that our records will be complete. The information thus brought to light is recorded in a card-index file of specialized skills, to be consulted for locating persons possessing any specialized skill for which need arises.

The Coordinator keeps fully informed on legislation—existing, pending, and proposed—which might affect veterans employed in the Office; arranges interviews with representatives of the Veterans' Administration, Civil Service Commission, Adjutant General's Office, and other organizations; and acts as direct liaison between our Director of Personnel and our operating officials, to insure that the latter are informed of current and pending policies concerning veterans. He recommends new procedures or amendments to existing procedures affecting veterans employed here; keeps the Director of Personnel informed on all matters relating to veteran transactions; and familiarizes himself with any material relating to handicaps affecting employment in the Office. He follows up each reassignment to duty of a returned veteran, observing the effectiveness of the placement and the veteran's degree of adjustment and satisfaction. He maintains and prepares all records and statistical data concerning veterans which may be required beyond the normal records of the Personnel Division.

Among benefits enjoyed by veterans and services offered to them are the following:

A number of returned veterans who served in this Office prior to March 16, 1942, have now had their war-service appointments converted to permanent status, under civil-service rules and regulations.

Competitive civil-service status is given to all 10-point (disabled) veterans, unremarried widows of veterans (subject to existing require-

ments), and other veterans who may prove eligible through length of service or through previous employment.

Veterans are encouraged to add to their educational qualifications, and extended leave without pay is granted to those who apply for such leave for the purpose of attending school under the GI bill of rights.

The Office maintains a housing service to assist returning veterans to secure adequate housing. Necessary priorities are secured for veterans who wish to qualify for residence in a Government housing project. Assistance is also given returned veterans who wish to procure a loan under provisions of Public Law 346 to buy or build a home.

The recreation division of the Government Printing Office Cafeteria, Recreation, and Welfare Association (see p. 87), composed of employees of this Office, has established a committee to assist returned veterans in any way possible in problems which normally fall outside the purview of official action. This association maintains liaison and communication with veterans who are still away in military service, particularly those overseas or in military and naval hospitals, sends gifts, and in other ways assures them that the Government Printing Office maintains interest in them.

Apprentice School

Our Apprentice School, which was closed during wartime owing to military service of young men of apprentice age, was reopened in August 1947.

Apprentice training in the Government Printing Office is on a 5-year plan. It provides formal classroom instruction in theory and supervised shop practice both in the school and in production divisions.

There has been an intense amount of interest shown, both within this Office and by persons outside, in the reopening of the school. Officials of this Office and leaders of the printing industry have been collaborating to complete arrangements and research necessary to assure the maximum success of the school. Special attention has been given to the choice of competent instructors, both for trade training and for academic work; to the selection and purchase of necessary printing equipment, materials, and supplies; and to the revision and preparation of instructional material and texts, all of which involved a tremendous amount of research and editorial work. The schoolrooms have been reestablished in larger, newly decorated quarters and will provide an ideal environment. The area is fluorescent-lighted and air-conditioned.

In addition to the Director of Apprentices, the faculty consists of four instructors as follows: One for academic subjects, one for com-

posing, one for bookbinding, and one for presswork. These instructors were selected from 70 journeymen of this Office who competed through a comprehensive 2-day written examination, supplemented by oral interviews. Two of these instructors are themselves graduates of the Apprentice School. Since their graduation, they have had experience as journeymen in this Office. The clerical staff of the school consists of one secretary and one clerk.

The subjects and the number of class periods (ranging from 1 to 3 hours each) are:

<i>Subject</i>	<i>Class periods</i>
Survey of English fundamentals.....	130
History of printing.....	26
Federal Government.....	26
Applied English.....	52
GPO Style Manual.....	26
Chemistry in printing.....	20
Cost and estimating.....	26
Printing appreciation.....	6
Typography and design.....	20
Composing-room practices.....	149
Pressroom practices.....	149
Bookbinding practices.....	149

The general purpose of the Apprentice School is to train young men and women in the various branches of the graphic arts and specifically to prepare them for careers as journeymen craftsmen in the Government Printing Office. There is the further aim—and expectation—that from their ranks there will emerge future supervisory and administrative personnel. This expectation has been well justified in the past, as a number of the present officials of this Office are graduates of our school.

There is no obligation on the part of the Office to enroll the graduates of the school as journeymen employees, nor is there any obligation on the part of the apprentices to remain with the Office after graduation. However, a review of the records of the 640 apprentices who have made up the 14 classes trained in the Office since 1922 shows that all graduates have been offered journeyman employment; that 80 percent of them are still with this Office; and that most of the others remained for several years. A number of them are now in the Government service elsewhere, including Congress, where they are employed as printing clerks.

Admittance to the incoming class of apprentices has been limited to returned employee veterans of World War II who have permanent civil-service status. A competitive examination for such veterans was announced within the Office on March 5, 1947. Applications were received from 313 of the veterans on our rolls, 303 of whom presented

themselves to compete in the written examination on March 29. This examination consisted of a 3-hour general test. Those who attained passing ratings were listed on a register on the basis of their performance in the examination. From among these, a sufficient number who had made the highest scores were given oral interviews, and 75 were selected for assignment as the school's first quota.

Future training classes will be scheduled at 2½-year intervals until the school is again operating at capacity. Under the law, the Government Printing Office is limited in the training of apprentices to not more than 200 at one time.

Those veterans who competed in the written examination but were not finally selected for admittance to the school will be considered for openings which may occur throughout the organization in higher grade positions than the examinees now hold.

Apprentices are paid while learning. In the first year they receive 90 cents an hour. Thereafter, the scale is set at a percentage of the current wage rates of journeymen for the trades in which they are apprenticed, as follows: Second year, 60; third year, 70; fourth year, 80; and fifth year, 90 percent.

The basic rates paid to journeymen in the Government Printing Office at the present time are \$1.80 and \$1.88 an hour for a 5-day, 40-hour week.

Present apprentices, as veterans of World War II, will be entitled to apply for veterans' subsistence allowances under Public Law 346. This is possible because our school is a recognized on-the-job training institution. Such subsistence payments are independent of and supplemental to wages paid by this Office.

No credit is given in our school for any previous experience the student may have had in the printing trades. All appointees must begin on the same basis and complete the full 5-year course.

When entering the school, all apprentices are given the same 6-month probational course, which affords them an opportunity to become acquainted with practices in each of our various production sections. They spend one-half of each day in the classrooms and the other half in shop-work activities. During this period, the instructors and shop supervisors observe the reactions of each apprentice to the various classes of work, and the individual reactions of the apprentice are given consideration in making final placement into a specialized branch of the trade. Successful completion of this 6-month probationary period marks the real beginning of the apprenticeship. Each apprentice is then assigned permanently to that branch of printing for which he seems best adapted.

For the next 2 years the students attend classes 1 day each week

and spend 4 days in shop activities. For the following 2½ years they work in the production divisions, beside selected journeymen, to obtain trade experience. The final 6 months of the 5-year course is spent in acquiring specialized skills on certain types of hand and machine work.

As a larger number of apprentices are assigned to composing than to presswork or bookbinding, the course in composition may be taken as an example to illustrate the school's method of teaching trade practices:

The composing course, like the other trades taught, has been broken down into three stages of preparation; namely, the elementary, the advanced, and the specialized. The elementary stage deals primarily with habit-forming principles, fundamental trade operations, and industrial procedures. The advanced stage treats the subject in such a way as to stimulate appreciation of good printing by emphasizing the esthetic as well as the commercial value of the work. The specialized stage is set aside exclusively for the development of trade skills. The goal of the course is to fit the prospective journeyman for any branch of the composing room. The fundamentals of hand setting, make-up, lock-up, proofreading, and monotype keyboard and linotype composition are taught in their natural sequence.

Lesson sheets are used in teaching the fundamental operations. Before each assignment is handed out, the instructor devotes some time to explaining the relevant facts pertaining to the lesson. This lesson-sheet series is followed by a carefully selected set of work projects made up of small reprint jobs, dealing mostly with such work as name cards, letterheads, programs, billheads, etc.

The advanced stage takes up the study of typography. Here projects of a varied nature are issued to students in manuscript form. Several lay-outs of each assignment, showing the kind of type, size, etc., are drawn on paper and submitted to the instructor for approval. The student is then permitted to set the type specified in his own lay-out. This method teaches the student to visualize his work before attempting to compose it. These projects are extended in scope, to include booklets, folders, and various kinds of novelty printing. To augment this study, the class is given a more extensive course in lay-out and design by one of the printing designers of the Division of Typography and Design. At intervals throughout the 5-year period, special lectures are given the classes by superintendents of production divisions or by technicians who are skilled in highly specialized fields of the graphic arts.

Working on a rotating schedule, each student of composing receives an average of 3 months in each production division, repeating after a complete change in placement has been effected.

The final 6 months of apprenticeship are devoted to specialization, including an intensive training period of 6 weeks each in the Proofroom and in the Monotype and Linotype Sections. At the end of these trial specialization courses, the apprentice may elect to return to any branch of the graphic arts in which he has trained to establish his qualifications for that particular type of work.

During the 5-year course, each apprentice spends 1,352 hours in the school classrooms and 9,048 hours working in the production divisions on live jobs, which contributes proportionately to the output of the Office. The classrooms afford training features which would not be available in regular production-division-work routine and include such academic and technical training as are believed necessary to equip the apprentice with knowledge and experience which will enable him, at the earliest possible time, to assume responsibilities of a full-fledged craftsman.

The apprentice not only collects data and writes the copy for his printing projects but he is also urged to plan, compose, and supervise the printing of such projects. In previous years, the result of this method of directed self-instruction has been most satisfactory.

Students are encouraged to participate in the numerous national printing contests which are sponsored by leading trade organizations and trade journals, and in previous years several of our apprentices have won recognition in this field.

Formal commencement exercises, with diplomas, mark the graduation of each class of apprentices into journeyman status and onto the rolls of the Government Printing Office as craftsmen.

The printing machinery and miscellaneous equipment used in the school is composed of items originally purchased for the school between 1922 and 1938, supplemented by surplus property procured from other departments. The equipment of the school is currently valued at approximately \$20,000. The lay-out has been well planned to achieve the best possible conditions for teaching, study, and work projects.

Apprentices who went from the school into military service, interrupting their apprenticeship, have been provided opportunity to complete their apprentice training upon their return to duty. This is being achieved by assigning them to work for the remainder of their training course beside selected journeymen craftsmen in the production divisions under general supervision of the Director of Apprentices. The length of time yet to be served varies for each returnee, ranging from a few months to several years. Seventeen of the returned veterans have thus completed the remaining portions of their apprenticeships and have been graduated and assigned to journeyman

positions in the Office. Twenty-seven more are still engaged in completing their interrupted training. They are being detailed to the reopened school intermittently for special study to supplement their training in the production divisions.

In addition to the Apprentice School, there are a number of other training opportunities in the Office, especially for persons below the journeyman grade, offering in-service trade training which qualifies them as carpenters, electricians, pipe fitters, machinists, platemakers, etc. These helper-trainee positions are filled by selection of employees already on our rolls and showing aptitude for such work. In making selections, veterans are given preference. The trainees serve 5-year periods, with gradual assignment to increasingly difficult and responsible duties and with yearly advancements in grade and salary if their service and progress are satisfactory. After reaching top-grade helper status, they may be selected to fill vacancies occurring in journeyman positions in their trade. Maintenance Division employees, for example, are trained by this method.

Health and Welfare

EMERGENCY HOSPITAL

The Emergency Hospital, organized as a Medical Section in the Division of Personnel, provided 25,770 treatments to employees during the year, including medical and surgical first-aid for injuries in line of duty, non-Office injuries, and minor illnesses; preemployment examinations and physical-fitness examinations for job placement. The hospital staff includes the Medical Director, four nurses, and a secretary.

Added equipment includes a basal-metabolism machine and a whirlpool bath, both acquired through the War Assets Administration from surplus property.

Resignation of the Medical Director on March 16, 1947, necessitated the appointment of a successor. A number of applications were received and each applicant's qualifications were carefully reviewed before selection was made. The new Director has specialized in the study of occupational diseases, dermatosis, mental hygiene, and fatigue.

Plans are being made to expand the services of the Emergency Hospital under the provisions of Public Law 658, Seventy-ninth Congress, entitled "An Act to Provide for Health Programs for Government Employees." This will be done in cooperation with the United States Public Health Service. It is expected that that Service will set up standards on a Nation-wide level for a preventive medical program for Federal employees. Such programs in private industry have established the fact that they pay dividends in increased efficiency and productivity.

Under the new law, heads of agencies, within the limits of appropriations made available therefor, are authorized to establish, by contract or otherwise, health-service programs which will provide medical and dental care for employees under their jurisdiction, limited to treatment of on-the-job illness; dental conditions requiring emergency attention; pre-employment and other examinations; referral of employees to private physicians and dentists; and preventive programs relating to health.

The basic health program provided by this act includes: (1) Promotion of the individual employee's health; (2) diagnostic and advisory services; (3) treatment, medical and dental, as defined by the act; (4) prevention of disease; (5) analysis and statistics; and (6) maintenance of medical records of employees as confidential information.

It is interesting to note that the Government Printing Office has had for many years a Hospital and Medical Section which provides nearly all the services just now being inaugurated in many Federal agencies, but it is hoped to evolve a broader preventive medical program from the present emergency first-aid set-up.

Plans include a larger medical library and nurses trained in public-health methods. Changes are to be made in filing and keeping records; and new procedures will be considered regarding employee relations; job placements, sick leave, and leave without pay.

In addition to providing immediate treatment for injuries and illnesses, our Medical Director maintains liaison with the Medical Directors of the Civil Service Commission and the Bureau of Employees' Compensation regarding health and physical requirements of all printing-trade jobs; surveys and recommends control measures relating to health and physical hazards in the printing trades; records and controls cases of communicable diseases; and maintains a complete medical folder and treatment card file on each employee, beginning with the preemployment physical examination. Our Medical Director also makes periodical inspections of the plant and approved plant surveys in cooperation with the United States Public Health Service.

SAFETY PROGRAM

There is a growing interest throughout industry in safety measures and accident prevention. The Government Printing Office as a manufacturing plant utilizing high-powered machines has long been aware of the problem, and our safety committees have been functioning for a number of years. On November 19, 1945, President Truman requested all Federal agencies to make accident-frequency surveys to determine whether the services of a full-time safety officer for each agency would be advisable.

On September 3, 1946, a full-time Safety Officer was added to the

rolls and assigned to the Medical Section. Our Safety Officer was appointed to act in an advisory capacity to supervisors in fulfilling their responsibilities for the safety of their employees; to maintain and analyze accident records and statistics; to make housekeeping and safety investigations as directed; and make recommendations to management for improving our safety program.

After surveying the safety problems of the Office, our Safety Officer submitted a report embodying his findings and recommendations, among which was the recommendation that responsibility for safety be vested in a representative committee of officials under the chairmanship of an official other than the Medical Director.

Consequently, in order to relieve our Medical Director of responsibility for the safety program and to allow him more time for the additional responsibilities placed upon him by the passage of Public Law 658, the Public Printer revised his Administrative Order 5, effective February 1, 1947. The revised order places responsibility for the promotion, organization, and administration of safety in the hands of an Executive Safety Committee, under the chairmanship of our Mechanical Superintendent.

Under the direction of the Executive Safety Committee, a Safety and Housekeeping Subcommittee makes inspections and lost-time-accident investigations. Our Housekeeping Subcommittee prescribes corrective action to reduce the recurrence of accidents.

In general, the functions of the Executive Safety Committee are: (1) To reduce to writing and keep current acceptable safety policy and procedure; (2) coordinate safe practices in the Office; (3) establish shop safety committees and determine their structure, manner of functioning, and duties; (4) enforce all necessary safety rules and regulations; (5) recommend and introduce general safety and personnel-protective equipment; (6) promote safe practices through the use of visual-training aids, instruction, conferences, and supervision; (7) recommend the adoption, when applicable, of such safe practices as may come to the attention of the committee from other sources, including the Federal Interdepartmental Safety Council; and (8) keep adequate records to conform with those of the Division of Labor Standards and the National Safety Council.

The Executive Safety Committee is endeavoring to secure employee participation. It hopes to make the employee safety-conscious through the reestablishment of a safety committee in each section. These committees are composed of the foreman, a safety officer, and an employee representative elected by the section employees.

Interest in safety is being stimulated by the inauguration of a poster program, using Government and commercial safety posters and posters

prepared with special reference to our particular accident experiences.

Surveys have been made of our machinery and equipment for possible installation of additional safeguards. The use of personal-protective equipment is being extended.

With the aim of directing attention to any arising need for special emphasis on safety, we introduced a new series of safety bulletins. These are posted on bulletin boards in the sections throughout the Office; copies are also made available to superintendents and foremen for their files. The first two bulletins were issued during the year: Safety Bulletin No. 1 required submission of brief reports on all minor injuries. These reports are followed up to assure removal of the causes of such accidents. Safety Bulletin No. 2 prescribes the use and handling of gasoline. Experiments in our Division of Tests and Technical Control on the use of substitute detergents having high flash points have been so successful that they are being reported to the entire printing industry through its national organization.

In the calendar year 1946, there occurred in the Government Printing Office a total of 175 lost-time accidents. In addition, 4,232 employees received minor injuries requiring first-aid treatment. This gave the Office an accident frequency of 14.4 for the year, an increase of 20 percent over 1945. Many of the 1946 injuries were sustained by skilled tradesmen who know their jobs and are completely familiar with the machinery and other equipment with which they work. Injuries of this kind can be eliminated, and the safety program of the Office is designed to create that effect.

No comparison can be made in accident severity, as records were not maintained prior to September 1946. The accident-severity rate for the 10-month period ending June 30, 1947, was 0.029. This rate compares favorably with the average for the printing and publishing industry, as determined by the National Safety Council. The accident-severity rate for the industry as a whole, as reported by the Council, is about twice that of our plant.

Since the purpose of the safety program is not only to provide for the employees' welfare but also to reduce the cost to the Government, a table of the direct cost per employee per year for the entire Federal civil service and for this Office is included here:

Year	Federal Gov- ernment	GPO
1944.....	\$5. 85	\$2. 66
1945.....	5. 22	4. 31
1946.....	4. 78	2. 44

These figures are from The Injured Federal Employee, Bureau of Employees' Compensation, June 30, 1947.

Employees of this Office are encouraged to participate in undertakings that improve morale or otherwise provide the benefits that can be derived from group action and group association. During the past few years, activities of this kind have grown in number and scope. The reports which follow indicate a broad and lively interest on the part of our employees in such activities, which can be expected to increase as postwar conditions bring added opportunity for participation.

Group hospitalization.—Group hospitalization has continued to increase. When the plan was introduced into the Office on May 1, 1935, 515 employees joined the organization. On April 30, 1939, there were 1,629 members. At the close of the fiscal year 1947, membership had mounted to 2,979.

For the nominal cost of 65 cents a month, members are assured 21 days' hospital care, including semiprivate accommodations, bed and board, general nursing care, use of operating room, ordinary medications, and routine laboratory examinations. If more than 21 days' hospitalization is needed, the participating hospitals allow a discount of 10 percent on room accommodations.

Under contracts in effect a year or more with no hospital service having been given in the preceding year, each participant becomes eligible for 30 days instead of 21, and in lieu of 10 percent discount participants obtain a reduction of 50 percent on charges for semiprivate accommodations for any confinement beginning within the 30 days and extending continuously for not more than 6 months from the date of admission.

The contract makes special provision for hospitalization in other cities in the event an accident or an acute illness occurs while the subscriber is out of the city and unable to utilize facilities of a local participating hospital.

Participation is open to all employees of the Office under 65 years of age who have been in sound health for 30 days preceding the date of application for membership. There is also available a contract for the subscriber and spouse at \$1.50 a month or spouse and unmarried children under the age of 18 at the rate of \$1.75 a month. Employees who hold the subscriber-spouse or subscriber-family contracts may obtain group-hospitalization benefits for their unmarried dependent children between the ages of 18 and 25 years at a cost of 65 cents a month for each child.

Group Health Association.—Membership in Group Health Association, organized in 1937 to furnish medical and hospital services to its

members, is open to employees of the Government Printing Office. A nonprofit organization, it is managed by a board of trustees.

Government Printing Office participants elect a representative and alternate to the advisory council. The representative attends council meetings, makes informal reports, answers inquiries, and obtains application blanks for interested employees of the Office.

Group life insurance.—The Government Printing Office Group Life Insurance Association was organized May 1, 1931, to provide group life insurance to our employees. It is underwritten by a legal reserve life-insurance company.

Employees under 35½ years of age may obtain insurance of \$1,000 per unit (maximum 3 units) at \$1 a month per unit. Beginning at age 36, to the maximum age of 60, the amount of insurance per unit is from \$966 to \$200, depending upon age at time application is accepted. The amount of insurance granted to members is not reduced with advancing years, and members may continue this protection after they leave the Government service.

The reserve fund of the association, which has increased steadily each year, was established in an effort to maintain indefinitely the \$1 per unit monthly dues, should the present premium rates of the association (which are adjusted annually) be materially increased owing to the group's attaining a high average age or showing a high-mortality experience.

The following comparison shows the changes which have occurred during the time indicated:

	As of Apr. 30, 1939	As of Apr. 30, 1947 ¹	Increase
Number of claims paid:			
Death.....	236	642	406
Disability.....	13	29	14
Total.....	249	671	420
Amount of claims paid:			
Death.....	\$213, 307	\$668, 561. 86	\$455, 254. 86
Disability.....	10, 083	16, 338. 21	6, 255. 21
Total.....	223, 390	684, 900. 07	461, 510. 07
Units in force:			
First unit.....	3, 580	4, 696	1, 116
Second unit.....	1, 950	2, 719	769
Third unit.....	480	1, 055	575
Total.....	6, 010	8, 470	2, 460
Amount of insurance in force:			
First unit.....	\$3, 112, 714	\$4, 140, 692	\$1, 027, 978
Second unit.....	1, 688, 197	2, 336, 701	648, 504
Third unit.....	386, 146	843, 885	457, 739
Total.....	5, 187, 057	7, 321, 278	2, 134, 221

¹ Cumulative.

Federal Credit Union.—The Government Printing Office Federal Credit Union was granted its charter on August 20, 1935, under authority of the act approved June 26, 1934. The purpose of the Federal Credit Union system is to establish a further market for securities of the United States and to make credit available to people of small means for provident purposes through a national system of cooperative credit, thereby helping to stabilize the credit structure of the United States.

The statement of condition as of June 30, 1947, is as follows:

ASSETS	
Loans.....	\$148, 791. 81
Cash in banks.....	34, 667. 24
Petty cash fund.....	10. 00
Change fund.....	2, 000. 00
United States bonds.....	165, 427. 00
Federal Savings and Loan shares.....	246, 000. 00
Other assets.....	229. 39
Total.....	597, 125. 44
LIABILITIES	
Shares.....	567, 464. 91
Reserve for bad loans.....	22, 078. 24
Undivided profits.....	588. 23
Withholding taxes.....	356. 25
Profit and loss.....	6, 637. 81
Total.....	597, 125. 44
Total membership.....	4, 445
Total loans to members since organization.....	\$2, 786, 893. 81

Loans to members are payable either in monthly or semimonthly installments, the interest charge under the act being 1 percent a month on unpaid balances.

Owing to wartime restrictions, the shares deposited by members exceed the demand for loans, and it, therefore, became necessary to purchase interest-bearing Government securities as shown in the statement.

Cafeteria, Recreation, and Welfare Association.—The Government Printing Office Cafeteria, Recreation, and Welfare Association is a nonprofit organization devoted to the maintenance of the cafeteria and the coordination of recreation and welfare activities in the Office.

The cafeteria is operated for the convenience and benefit of the employees. It is not the purpose to operate at a profit, but merely to produce a working capital with a surplus sufficient to provide for neces-

sary improvements and replacements of equipment. Open 24 hours a day, the cafeteria serves approximately 7,200 persons daily. At the present time it employs 99 persons, including the manager.

Control and management of the association, subject to approval by the Public Printer, are vested in the employees of the Office, who elect a general committee of section representatives with delegated power to elect the officers of the association. Section representatives are elected on the basis of 1 representative for each 100 employees or fraction thereof in each section. The board of directors is made up of the officers of the association, two representatives named by the Public Printer, the recreation director, and one other representative of the recreation division, and the four members of the board of auditors. The board of directors manages the association and its property, subject to approval by the Public Printer.

The cafeteria has been given a high sanitation and health rating by the Health Department of the District of Columbia. Our Medical Director makes periodic inspections.

In spite of the many difficulties encountered during the war because of food rationing and the shortage of competent workers, there was no break in the service of the cafeteria. Security regulations made it necessary to deny service to outsiders, but that restriction has been removed and employees may now bring in their friends and relatives.

The recreation division is governed by a council composed of two members of each organized club, who in turn elect the director, assistant director, and secretary-treasurer. No membership fee is charged, and competitive sports, dances, outings, and various activities are sponsored and encouraged. Bowling and golf attract the largest groups, while softball, basketball, tennis, chess, checkers, shuffleboard, fishing, rifle and pistol, and camera clubs all have interested members. Eleven hundred employees are actively engaged in competitive sports.

The recreation division also provides weekly lunchtime movies, radio, and music in Harding Hall.

American Legion Post.—Government Printing Office American Legion Post, No. 33, now has 762 members, of whom approximately one-third are veterans of World War II.

In addition to the usual assistance furnished veterans in filing claims, assisting their widows, etc., the post engaged in many other activities. At patriotic observances members participate in making the necessary arrangements and act as color bearers. On Memorial Day, graves at Arlington National Cemetery are decorated. Welfare activities include a regular monthly contribution to the District of Columbia Department milk fund for tubercular children.

The post was represented at the District of Columbia Department Christmas party held at Walter Reed General Hospital, contributing toward refreshments and gifts for patients. At the annual visitation to Mount Alto Veterans' Hospital, under the auspices of the post auxiliary, cigarettes and useful personal articles were distributed to all patients.

As a part of the Americanism program of the Legion, certificates and medals were presented to the outstanding boy and girl of the graduating class of Elliott Junior High School, both at the February and June graduation exercises. Another well-established Americanism activity is the sponsoring of an American Legion junior baseball team at the Coolidge High School, of this city.

The post formerly restricted its membership to ex-service employees of the Government Printing Office. Recognizing that there was a desire on the part of some members of the post to have veteran sons and daughters participate in the activities and patriotic work of this post, the constitution was recently amended to admit them to membership.

United Veterans of American Wars.—The United Veterans of American Wars, Government Printing Office Unit No. 1, was organized in 1922, and it is the oldest veterans' organization in the Government Printing Office. Its membership numbers 328 and is composed of Spanish-American, World War I, and World War II veterans. Its purpose is to aid and assist its members in time of illness and distress.

Unit No. 2, known as the Colonel Charles Young Unit, has an active membership of 15 and about 25 inactive members. The unit welcomes World War II veterans, of whom several have already been taken into membership. It is a member of the Joint Memorial Association, composed of 15 veteran organizations. On Sunday, May 25, the association held impressive memorial services for deceased veterans at St. Luke's Episcopal Church. On Memorial Day, the unit assembled at the Government Printing Office to accept contributed flowers for decorating the graves of veterans.

Both units participated during the year in many patriotic and social events.

Veterans of Foreign Wars.—Although Government Printing Office Post 3874, Veterans of Foreign Wars, is one of the youngest organizations in the Office, its growth in a little more than 3 years indicates a bright future. Membership on June 30 was 260. The Public Printer is a charter member of this Post, as well as of the American Legion. The post has accumulated approximately \$8,000 which will go toward the construction of a home.

The principal purpose of the organization is to help comrades and

their families in distress, particularly those who are hospitalized. In the year's poppy drive, \$1,300 was realized for hospital and relief work.

Other activities have included participation in a number of civic and patriotic gatherings. The post colors have been displayed at memorial services at Cedar Hill Cemetery, War Memorial in West Potomac Park, and Arlington National Cemetery.

A bowling team in the Seventeenth National Tournament League is sponsored by the post. Incidentally, the team brought home some of the tournament prize money.

BOND PURCHASES

The Government Printing Office Bond Unit, under the direction of our Disbursing Officer, was established in February 1944, to afford employees the opportunity of participating in the pay-roll savings plan.

The primary purpose of the plan is to shift the war loan from the commercial banking system into the hands of the people. The taxpayer must bear the entire cost of the war debt plus bond interest. He escapes paying the interest only by buying bonds. Moreover, millions of Americans have found the pay-roll plan the only sure way to save. For these reasons the Public Printer urges every employee to take part in it and gives them every opportunity to do so.

Since its inception, the Bond Unit has participated in four war-loan drives and one victory drive. These drives were in addition to the regular pay-roll savings plan. Actual cash sales during the five drives, excluding pay-roll deductions, amounted to \$1,358,393.75.

The pay-roll savings plan made a slow start, but increased steadily until January 1945. At the all-time high, 5,617 employees were participating in the plan, representing 83.8 percent of our personnel. By November 1946, participation had ebbed to 2,618, or 37.7 percent, while present figures show 2,844, or 41.8 percent, of total employees.

Deductions made from salaries of employees, from the date of the establishment of the Bond Unit to the present time, amount to \$2,666,122.64, and actual bond issues total \$2,638,631.25, the difference being attributable to individual accounts where the accumulation of cash is insufficient for the issuance of a bond.

CONTRIBUTIONS TO WELFARE ORGANIZATIONS

The Office ranked high among Government agencies in contributing to welfare organizations throughout the war years and since the ending of hostilities. They have given \$121,193.20 to the American Red Cross, \$236,114.13 to the Community Chest, and \$8,439.81 to help toward the prevention and treatment of infantile paralysis.

Many other civic and humanitarian activities and projects have been substantially supported. These include clothing collections and special foreign relief funds; sewing, knitting, and surgical-dressing work carried on as a part of the American Red Cross program; Children's Hospital collections; and National Symphony benefits, among others.

Blood donors, organized throughout the Office, contributed 5,797 pints of blood to the Red Cross blood bank. The organization is still active and has furnished 160 pints of blood to veterans' hospitals.

SICK-LEAVE REGULATIONS AND EMPLOYEE ATTENDANCE

This Office has made continuing studies of the effect of sick-leave regulations on employee attendance. Our records show a progressive tendency to regard the maximum of sick leave allowed merely as an extension of annual-leave privileges. Our records further show that a disproportionate amount of sick-leave taking immediately follows or precedes week ends, holidays, and approved annual leave.

During the past six calendar years, the average use of sick leave per employee on an Office-wide basis has been as follows: 1941—7.25 days; 1942—9.69 days; 1943—10.16 days; 1944—9.35 days; 1945—11.85 days; and 1946—14.60 days.

The temporary decline in 1944 can be attributed to the effect of Administrative Order No. 26, which provided that employees reporting sick during the 40-hour work period (Monday through Friday) would not be required or permitted to work on Saturday, an overtime day carrying premium pay. This regulation was patterned on a navy-yard plan. It was rescinded in 1945, after the end of the war in Europe brought a slight relaxation in our work load.

The following table shows sick leave taken in the 9 months—September 1944 to May 1945—when the order was in effect, and during the corresponding months of 1945 and 1946, after controls were removed. The latter figures closely approximate those for 1943–44.

	1944-45	1945-46	Percent increase
	<i>Hours</i>	<i>Hours</i>	
September.....	29,310	57,843	97.34
October.....	42,420	93,174	119.64
November.....	37,220	61,802	66.04
December.....	34,484	84,698	145.61
January.....	55,504	88,748	59.89
February.....	49,896	63,862	27.99
March.....	52,644	67,632	28.47
April.....	38,834	86,696	123.24
May.....	42,954	75,104	74.84
Total.....	383,266	679,559	77.30

The sick-leave experience of this Office is apparently common throughout the Government. Dr. Leon Schwartz reported in the June 1944 issue of Personnel Administration that the average employee of the Bureau of the Census was away on sick leave 11.1 days during 1943. He further reported that approximately 40 percent of sick leave was used for "illnesses of convenience." This was based upon investigations by the "sick-report nurse" and upon the "curious drop in illness on pay days," which was marked by its consistency and its being almost constantly around 40 percent. One-fourth to one-third of the employees reporting sick were not at home when the visiting nurse called. On pay days, sickness dropped between 40 and 50 percent.

The Public Printer reported the results of the application of Administrative Order No. 26 to the Civil Service Commission on May 1, 1946, and concluded his letter in this manner:

Before making a final decision regarding the desirability of modifying or rescinding Administrative Order No. 26, I will appreciate an expression from you for my guidance in answer to the following questions:

1. Does Administrative Order No. 26 constitute a worth-while personnel-utilization program within the purpose and the spirit of A Program for Economizing in Personnel as outlined in Form 4462, Better Use of Personnel?

2. On the basis of complaints received concerning this program and the information supplied by this Office, does the Civil Service Commission recommend rescinding Administrative Order No. 26?

No reply was received.

In management meetings with supervisors and in talks to employees, the Public Printer has repeatedly pointed out that sick-leave costs are a part of overhead that must be passed on in charges for printing; that abuse of the privilege constitutes a fraud against the Government and a threat to the security of employees—but the apparent abuse continues.

The temporary improvement shown while Administrative Order No. 26 was in effect leads to the belief that a 2- or 3-day delay in charging time off to sick leave would result in greater accuracy in allocating such time, would effect a considerable reduction in Government pay-roll expenditures, and would greatly improve the service of Government agencies. Possibly the introduction of incentives, such as the partial conversion of unused sick leave to annual leave, would accomplish the purpose without hardship to employees and to the over-all advantage of the service.

The Government Printing Office cannot impose restrictions that are not made equally applicable to all Federal employees. The condition is apparently Government-wide and should be viewed from that stand-

point. It is, therefore, recommended that consideration be given to the establishment of regulations that would result in Government-wide reduction in the misuse of the sick-leave privilege.

WAGE NEGOTIATIONS

Prior to the passage and approval of the law now popularly known as the Kiess Act, the rates of pay of craftsmen in the Government Printing Office were set by legislative action. This act, however, provides for the fixing of rates of pay by the Public Printer. In some instances, approval by the Joint Committee on Printing is required. The pertinent part of the act is briefly as follows:

The rates of wages, including compensation for night and overtime work, for more than 10 employees of the same occupation, shall be determined by a conference between the Public Printer and a committee selected by the trades affected, and * * * become effective upon approval by the Joint Committee on Printing * * *; and compensation determined as provided herein shall not be subject to change oftener than once a year thereafter * * *."

The first negotiations were conducted by the immediate predecessor of the present Public Printer shortly after the passage of the Kiess Act in 1924, and were completed in December of that year. In 1926, wages were again negotiated and the rates in the Government Printing Office were brought to a point approximately as high as anywhere else in the United States, which condition prevailed for a number of years. Not until 1941 did the journeymen of the Office again request negotiations with the Public Printer, who did not feel that conditions at that time justified a recommendation to the Joint Committee on Printing that wages be increased. He fully explained the reasons for this decision in a series of talks to the employees of the several shifts at meetings in Harding Hall on February 25, 1942. Approximately 9 months later, the employee committees decided to carry an appeal to the Joint Committee. After hearings and deliberations, the Joint Committee sustained the Public Printer's decision that wage increases in the Office should not be granted unless Government-wide action were taken to raise the pay of all Federal employees. Following such Government-wide increases, rates were renegotiated, in accordance with the terms of the Kiess Act, in August 1944, October 1945, and December 1946.

The following steps make up the usual procedure of preparing and conducting negotiations:

1. Either formal or informal notice to the Public Printer from one or more of the crafts that they desire to negotiate new rates of pay.
2. Posting on bulletin boards of advice to all groups affected that they may proceed with the election of committees.

3. Posting on bulletin boards in the sections affected the names of committee members selected, advising that they are acceptable to the Public Printer and offering the opportunity to all employees to state objections, if any.

4. Letters to the chairmen of the committees advising that no objections having been filed, the committees are acceptable to the Public Printer.

5. After all committees have been selected, first meetings of the committees with the Public Printer are scheduled sufficiently in advance to permit the several groups to submit their proposals.

6. All the meetings are held in an informal manner. In addition to the Public Printer, there are usually present the Deputy Public Printer, who may have to conduct future meetings in the case of the Public Printer's unavoidable absence; a representative of the Personnel Division, who does not participate in the negotiations except when called upon by the Public Printer or the committee members to answer questions; and a stenographer, who keeps a record of the proceedings. At each meeting the date for the next meeting is usually set.

7. When agreement is reached as to the new wage rate for each of the crafts represented in the negotiations, these rates are submitted to the Joint Committee on Printing for final approval. Such approval is sometimes not requested until the negotiations with all groups have been completed.

8. Immediately upon approval by the Joint Committee, an administrative order is posted on the bulletin boards for the information of all employees.

Owing to factors over which the Public Printer has no control, wage negotiations may spread over a period of several months. The employees are given full opportunity for expression. In 1946, not fewer than 50 meetings had to be held with the 10 committees to establish the per diem rates of pay shown in the Public Printer's administrative order issued at that time:

1. As a result of negotiations conducted under authority of the Kiess Act (U. S. C., title 44, sec. 40), the following hourly pay rates, agreed upon by the Public Printer and the negotiating committees representing the employees, were recommended to and approved by the Joint Committee on Printing, effective December 18, 1946:

Composing Division (all journeymen).....	\$1. 88
Presswork Division:	
Platen pressmen.....	1. 72
Cylinder pressmen, including Miehle vertical.....	1. 88
Offset pressmen and operating head pressmen.....	1. 98

Platemaking Division:

Photoengravers.....	\$2. 10
Electrotype finishers and molders.....	1. 94
Stereotypers.....	1. 94

Binding Division (all journeymen)..... 1. 80

Maintenance Division:

Carpenters.....	1. 88
Electricians.....	1. 88
Machinists.....	1. 88
Pipe fitters.....	1. 88

2. Key-worker positions established under Administrative Order No. 36 will continue to receive the same differential as heretofore.

3. Under the authority conferred by section 40, title 44, of the United States Code, effective December 18, 1946, the pay rate of all hourly wage employees not subject to the negotiating provisions of the Kiess Act was increased by an amount which, when added to the 14 percent received July 1, 1946, created a rate 20 percent in excess of the rate in effect June 30, 1946.

ADMINISTRATIVE AND SUPERVISORY SALARIES

This subject is treated briefly here because the question is frequently raised, usually during wage negotiations with employee representatives when costs are being discussed. Exact salary tables for the commercial industry are hard to obtain because such information is generally regarded as confidential.

Beginning at the foreman level, the Office pays a differential of 31.75 percent over the wages of skilled journeymen. In the commercial industry, the range is much greater. In large printing centers, such as New York and Chicago, foremen receive a weekly minimum of \$100, with the maximum being much higher. In Washington, the commercial range is \$100 to \$125, and in a few instances even more. Our foremen are paid the minimum.

Division superintendents in commercial plants receive from \$7,500 to \$10,000 annually. The same class of Government Printing Office officials are paid from \$5,905.20 to \$6,862.80.

In plants doing an annual business of \$1,000,000 or more, it would be unusual to find a production manager receiving less than \$10,000 a year. A Washington printing house operating only two departments employs a production manager for each, with combined salaries in excess of \$14,000. A midwestern plant, considered small in comparison with the Government Printing Office, pays its production manager \$15,000, and this is not an isolated instance. It is evident that if the larger plants pay division superintendents \$7,500 to \$10,000, production managers would draw from \$15,000 to \$25,000.

The midwestern firm mentioned pays its comptroller \$8,500 and its personnel officer \$9,000 plus bonus and trust-fund earnings that raise their annual incomes to \$12,000 and \$13,000, respectively. The range for comptrollers, treasurers, or chief accountants runs from \$6,500 to \$15,000 for companies in the million-dollar-business class, with exceptional tops of \$25,000 being reported.

Printing Industry of America's latest report shows average pay of the top executive in printing houses to equal slightly more than 1 percent of sales; that is, \$50,000 annually for the head of a \$5,000,000 business. When the profit rate is higher, salaries may go as high as 2.4 percent of sales. The \$5,000,000 company represents employment for approximately 1,000 persons, in comparison with the 7,000 employees in the Government Printing Office.

One of the more prominent commercial firms in Washington pays its top man three and one-half times the salary of the Public Printer. It pays each of two others twice the salary of the Public Printer. One printing firm, also in Washington, paid its head official \$24,000 before the war. An employee of the Government Printing Office recently accepted a position as manager (not the top executive) of a Washington printing house at \$10,000 a year. Not one of these Washington firms employs more than 600 persons. A midwestern firm employing 1,000 persons pays its president \$45,000 a year and its vice president \$20,000—with a share in the profits. A well-known Boston printing house paid its president \$50,000 before the war plus a share in the profits.

Executive assistants, usually holding the title of vice president, draw from 50 to 75 percent of the amount paid the top executive.

While our size and volume of business demand a large administrative staff, the salaries paid are comparable only to the averages in printing houses whose business is less than \$1,000,000 a year.

FACT-FINDING COMMITTEE RECOMMENDED

Public printing and binding has always been a controversial matter; no doubt it always will be. From the earliest days of the Republic, the Government's agencies have desired to retain complete authority over the publications which they originate. The control which has been for many years vested in the Joint Committee on Printing and the Public Printer has been accepted only as a matter of necessity.

In every period of emergency all traditional objections are again brought out by those who would discard the organization, so laboriously constructed, to control expenditures, methods, processes, quantities, style, prices, content, distribution, and sources of supply.

Ambitious or misinformed agencies and individuals within the Gov-

ernment receive eager assistance from commercial groups. Salesmen, form designers, publishers' representatives, and dealers in equipment swarm through Government offices with estimates, samples, lay-outs, and arguments in favor of their product. They will help Government officials to plan a projected publication with specifications suitable only for their own plants. When they fail to secure contracts, they turn their fire on the system and the printing regulations. The public official who is willing to listen can have an already finished job re-planned, repriced, rescheduled. Under these hypothetical conditions, the cost is always favorable, the quality is excellent, and delivery dates are unfailingly met.

All this anticontrol activity, plus many honest differences of opinion, plus the obvious possibility of error on both sides, calls for a continuing, impartial fact-finding board. In 1946, the Public Printer initiated a movement for its establishment in a letter to the Director of the Bureau of the Budget, which, in part, reads as follows:

I will recommend to the Joint Committee on Printing, provided you have no objection, the setting up of a committee of three—to be composed of a person appointed by the Joint Committee on Printing for the specific purpose, a representative of the Bureau of the Budget, and a representative of the Government Printing Office—to which will be referred all questions raised by the various departments and agencies as to the services rendered by the Government Printing Office or as to the charges made for the same; also that this committee be charged with the responsibility of thoroughly investigating the causes for the criticisms and have the authority to recommend, through the Director of the Bureau of the Budget, any corrective action which the committee may think necessary to eliminate such causes, if found justified.

This would make available to the Director of the Bureau of the Budget and to Congress an informed and unbiased opinion as to the efficiency and economy with which the Government's printing demands are met. I can well understand the confusion that now exists with reference to this subject. From my own investigations of the comparatively few cases called to my attention, this confusion results, I am certain, from general statements made by departmental representatives who do not have a sufficient knowledge of the subject or of the facts involved to enable them to examine and discuss the situation intelligently or correctly. In many cases these statements are made in all sincerity but by persons who do not realize or have little knowledge of the problems, difficulties, and technicalities involved in producing a printing job efficiently and economically. Such statements cause lack of confidence not only in the Government Printing Office but also in the agency involved, as well as in the minds of members of the appropriations committees and other officials involved, with the resultant handicaps to those charged with the efficient production of the Government's printing and duplicating. I sincerely feel that a fact-finding committee of the type I have suggested, together with an admonition that no criticisms are to be made by the Government Printing Office of the activities of the agencies or by the agencies of the services or charges by the Government Printing Office until such statements are cleared by the fact-finding committee, will be of material assistance to all of us who are charged with the responsibility of seeing that printing needs are economically and efficiently met.

The Director of the Bureau of the Budget concurred in the recommendation, but suggested that the committee be increased to five to include a joint representative of the War and Navy Departments and another from the other major departments. The Public Printer again appealed for the creation of the committee during the legislative appropriation hearings for 1947. He repeated his plea in the 1948 hearings. Current criticism of controls over public printing and its cost, discussed elsewhere in this report (p. 20), indicate that the need for impartial review of such criticisms is very real. It is hoped that the committee will soon be ready to function. The Government Printing Office is ready to cooperate.

OFFICE OF CHIEF CLERK

Sixty-eight members of the Guard Section and 121 employees of the Sanitary Section account for the largest percentage of the personnel assigned to the Chief Clerk. The total for all sections—Correspondence Unit, Files, Guide, Messenger, Guard, and Sanitary—is 220. This represents an increase of only 23 since 1939, and should be compared with 235 at the end of the fiscal year 1946.

Based on a 1-month count, it is estimated that the Chief Clerk received 315,400 letters during the year, which were time-stamped and referred to various sections of the Office. All filed correspondence was cross-indexed. Outgoing letters and packages totaled 168,148. More than 15,000 active personnel files (personal and medical) were maintained. During the year, 409 photographs of new employees were made and filed. This is the lowest number in several years, the decrease being attributable to reduction in labor turn-over.

The Chief Clerk is charged with responsibility for dealing with all infractions of Office regulations, conducts interviews relating to misconduct, and reviews and records all conversations and correspondence having to do with these matters. Employee relations, settlement of bad debts, lost or stolen property, disputes between employees, and many other similar matters are under his jurisdiction.

The small guide force (six employees) receives all visitors on official business, as well as applicants for employment, and issues passes to them before permitting them to proceed to any section of any building, taking up the passes when visitors leave. The Guide Section acts as a clearinghouse for telegrams, special-delivery letters, personal letters to employees, and small packages and proofs coming from other departments. It routes notices and other material for Office-wide distribution and performs miscellaneous minor clerical duties.

Six employees in the messenger pool make half-hourly tours of

offices in the administrative divisions and hourly tours of all other sections for pick-up and delivery of mail, small packages, and inter-office communications, covering 36 numbered stations. It also performs for other divisions minor clerical work which can be done as filler.

Establishment of the pool resulted from a work-simplification proposal submitted in 1944, when messenger vacancies in the administrative divisions totaled approximately 30 and they could not be filled. The present arrangement has improved the service and produced savings estimated to equal \$40,000 annually during the war years.

To cover 3 shifts, the Guard Section has 8 officers and 60 men, exactly the number employed in 1939 before the Office floor area was increased by 49 percent. During the year, the Section turned in 7,163 reports of conditions requiring action by other sections. It took up 170,000 passes at the several entrances and exits of the four buildings. Peak employment of guards was reached in 1942, when authorized strength was 100 men. The reduction in force since that year has been made possible by improved inspection and reporting procedures and by a series of training courses that greatly increased the individual efficiency of guard-force members.

The Sanitary Section has cooperated with the Medical Section, Housekeeping Committee, and Safety Committee in keeping all buildings in such clean and orderly condition that commercial printers who see our plant and offices frequently declare that the Office is a model for the entire printing industry.

The Chief Clerk, in addition to his regular duties, serves on the Committee on Simplified Office Procedure and on the Efficiency Rating Review Board. The Assistant Chief Clerk is Chairman of the Grievance Board, the Welfare Control Committee, and is a member of the Safety and Housekeeping Subcommittee of the Executive Safety Committee.

PURCHASING DIVISION

Present-day market conditions for paper, metals, textiles, chemicals, and the many other materials necessary in the operation of the Government Printing Office continue to be difficult and unsettled. At times during the war period, after exhausting all other means of obtaining needed supplies, the Office could appeal to the War Production Board and later to the Civilian Production Administration for aid. Now that all Government controls have been abolished, the burden of the Purchasing Division is greatly increased.

During the fiscal year ended June 30, 1947, there were four advertisements for paper—two for 6 months' requirements for envelopes and

two for 6 months' requirements for bindery, pressroom, platemaking, and miscellaneous supplies. Total paper requirements for the fiscal year amounted to approximately 180,000,000 pounds. In each of the four attempts to get quotations for paper, the bids were solicited by advertisements in trade publications, daily papers, and circular letters sent to approximately 275 prospective bidders. For the first quarter of the fiscal year, 19 bids were received, covering 47 percent of requirements; for the second quarter, 19 bids, covering 34 percent of requirements; for the third quarter, 22 bids, covering 54 percent of requirements; and for the fourth quarter, 14 bids, covering 40 percent of our requirements.

In all cases in which the bids did not cover the estimated requirements, it was necessary to readvertise for spot purchases by the issuance of open-market specifications, telegrams, and telephone inquiries, and in most cases by personal appeal to the manufacturers and jobbers to supply the paper necessary to meet Government printing demands.

The percentage of coverage received on the quarterly advertisements does not give a true picture of the situation. While the Office received the percentage of coverage mentioned herein on its paper requirements, no bid was received for newsprint paper and only a small amount for book, writing, and offset papers.

Because of discontinued Government activities, the War Assets Administration has continued to report paper declared surplus, and in this manner large quantities of usable stocks have been received. This is also true of printing equipment. Many items have been obtained through this procedure. Such equipment and supplies were installed in the Government Printing Office or turned over to our field offices.

During the fiscal year, the Purchasing Division issued 15,987 orders, totaling in cost approximately \$31,561,188. A large percentage of the orders were for printing and binding. The volume of printing demanded by Government departments and agencies has not dropped to the point at which all requirements can be taken care of in the Government Printing Office. It is, therefore, still necessary to have a large volume of printing done by commercial firms throughout the United States. Since we began the purchasing of printing commercially and until the close of this fiscal year, we have placed 53,306 orders, at an obligated cost of \$114,749,168, with 2,039 contractors in 296 cities. We furnished the paper for practically all these jobs and the plates for a very large proportion of them. When these costs are added, the total expenditure for printing represented by commercial orders is approximately \$200,000,000.

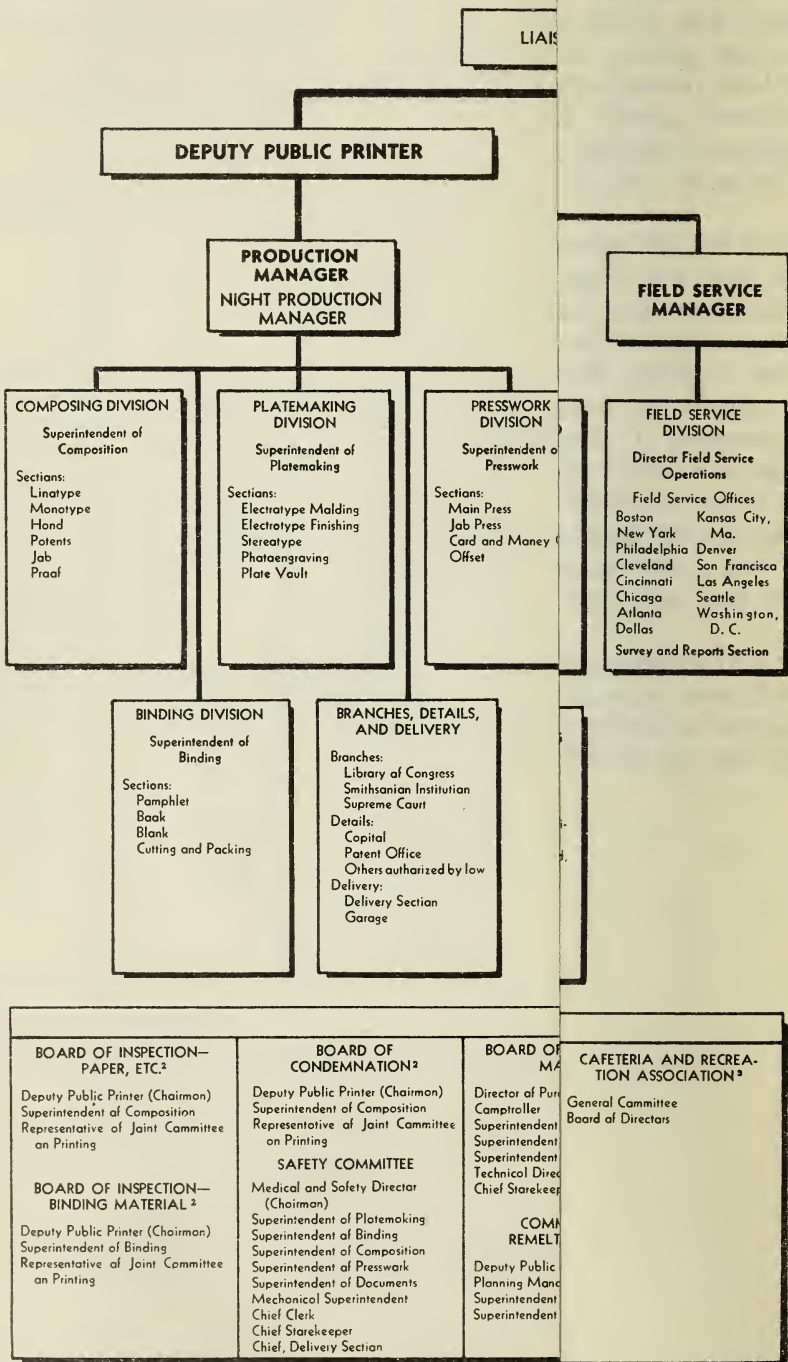
Owing to lack of sufficient storage space for stocks necessary to meet demands, we have spent in this fiscal year more the \$450,000 for the

storage, handling, and hauling of paper. Several years ago, the Public Printer recommended that an additional warehouse be built, and this recommendation is repeated in this report. (See p. 222.)

Throughout the war period, it was very difficult to place orders for machinery and equipment of all kinds. This condition still exists. During the actual war years no orders could be placed, as practically all the factories engaged in the manufacture of printing equipment were working on contracts for war materials. In the present fiscal year, however, orders have been placed for presses, binding machinery, motortrucks, indoor material-handling trucks, and other machinery or equipment. Delivery, of course, on many of these items will be spread over a period of 2 months to 2 years.

The report of the Chief Storekeeper shows receipt of 3,393 carloads of paper during the year, or 173,814,255 pounds net, and many millions of envelopes. The Stores Shipping Unit made shipments of blank paper, printed forms, printed matter, and miscellaneous material to Government agencies and commercial printers totaling 32,717,120 pounds. Confidential matter shipped by regular mail amounted to 1,032 sacks weighing 45,491 pounds. It processed and filled 6,345 orders for 326,513,485 copies of standard forms and supplies for departments and agencies. This Unit shipped out more than 15,000,000 pounds of waste paper and approximately 800,000 pounds of other waste materials, such as scrap iron, copper waste, zinc trimmings, used electrotpe plates, and linotype, monotype, and stereotype dross.

The report of the Chief of the Telephone Section shows that while there is a downward trend in the number of calls, they are still being handled in large volume. A recent traffic study showed an average of 1,100 calls per hour against approximately 2,100 at the end of the immediately preceding fiscal year.



¹ Superintendent of Documents.

² Established by Printing Act of January 12, 1895. All other boards established by the Public Law 49-100, 1906.

³ Cooperative organization of employees operates Cafeteria, sponsors recreational and entertainment.

PART II

Planning

ON APRIL 16, 1943, four planning divisions were created by Administrative Order 14, which was issued to effect control over planning, production, procurement, and delivery of printing, and to fix responsibility for the completion of work within the time specified by the Government Printing Office in line with the requirements of the agency requisitioning printing. On January 1, 1946, the order was supplemented to abolish the position of Production Planning Assistant to the Public Printer and create in its stead the position of Planning Manager, establishing him as the principal liaison official in departmental contacts and giving him the responsibility of administering the activities of the four divisions.

In addition to carrying most of the duties of his predecessor, the Planning Manager was charged with the postwar consolidation of the personnel in the divisions. Under his direction the force was reduced from the 1945 high of 347 to its June 30, 1947, level of 244 employees.

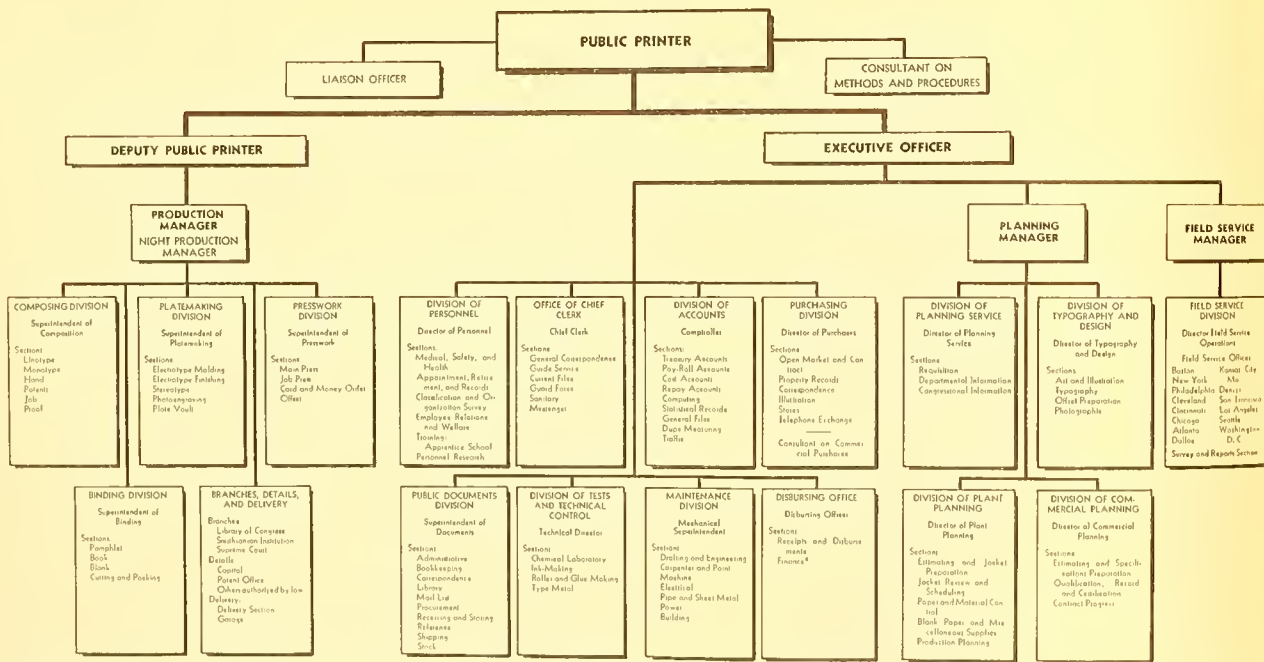
Because of the comparatively recent organization of planning in line with modern engineering trends and with the Government's requirements for service, charts showing the set-up of each planning division by personnel classifications and functions have been included in the reports of their activities.

The Planning Manager is also chairman of the Requisition Review Board and is a member of the Committee on Remelting Plates, the Style Manual Board, and the Work Simplification Board. He frequently serves on special-purpose committees and is the Public Printer's chief consultant on all matters directly relating to the activities of the planning divisions.

UNITED STATES GOVERNMENT PRINTING OFFICE

ORGANIZATION CHART

January 2, 1947



ADVISORY COMMITTEES

BOARD OF INSPECTION—PAPER, ETC.* Deputy Public Printer (Chairman) Superintendent of Composition Representative of Joint Committee on Printing	BOARD OF CONDEMNATION* Deputy Public Printer (Chairman) Superintendent of Composition Representative of Joint Committee on Printing SAFETY COMMITTEE Medical and Safety Director (Chairman) Superintendent of Planning Superintendent of Binding Superintendent of Composition Superintendent of Research Superintendent of Documents Mechanical Superintendent Chief Clerk Chief Delivery Section	BOARD OF AWARDS FOR MATERIAL Director of Purchases (Chairman) Comptroller Superintendent of Binding Superintendent of Composition Superintendent of Composition Technical Director COMMITTEE ON REMELTING PLATES Deputy Public Printer (Chairman) Planning Manager Superintendent of Documents Superintendent of Planning	PAPER SPECIFICATIONS COMMITTEE Director of Purchases Technical Director Chief Stockkeeper REQUISITION REVIEW BOARD Planning Manager (Chairman) Comptroller Director of Planning Service Chief, Requisition Section (Planning Service)	STYLE MANUAL BOARD Chairman (Designated by Public Printer) Planning Manager Superintendent of Composition Foreman, Plant Section (day) Foreman, Plant Section (night) Selected Members COMMITTEE ON SIMPLIFIED OFFICE PROCEDURE Comptroller (Chairman) Director of Purchases Superintendent of Documents Chief Clerk	GRIEVANCE BOARD Assistant Chief Clerk (Chairman) Director of Apprentices Chief Pay Roll Section Assistant Superintendent of Personnel COMMITTEE ON DEFERMENT Deputy Public Printer (Chairman) Production Manager Director of Personnel Mechanical Superintendent	EFFICIENCY RATING REVIEW COMMITTEE Comptroller (Chairman) Superintendent of Planning Chief Clerk WORK SIMPLIFICATION BOARD Production Manager (Chairman) Comptroller Planning Manager Mechanical Superintendent (Secretary)	HOUSEKEEPING COMMITTEE Assistant Production Manager (Chairman) Assistant Mechanical Superintendent Assistant Superintendent of Documents under inspection PRINTING SURVEY COMMITTEE Field Service Manager Representative Joint Committee on Printing Bureau of the Budget Agency Council	CAFETERIA AND RECREATION ASSOCIATION* General Committee Board of Directors
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*Non-employees of Government.

*Household by Printing Act of January 17, 1935. All other boards established by the Public Printer.

*Agency employees. All other agencies, offices, or persons interested in government printing.

DIVISION OF PLANNING SERVICE

The administrative order which created this Division in 1943 assigns to it responsibility for receipt and registration of all congressional and departmental requisitions, issuance of waivers where direct procurement by the ordering agency is in the Government's best interest, selection of publications best suited for commercial procurement, establishment of schedules, maintenance of records on day-to-day progress of work in the production divisions, and all Office liaison with ordering agencies on questions which arise in the requisitioning and production of public printing and binding. It also administers the printing and binding laws, regulations, and orders, and performs all functions relating to the foregoing activities, usually in cooperation with the other divisions of the Office.

In the fiscal year 1947, there was a marked increase in the number of printing and binding requisitions received and handled. The number of waivers granted to the agencies for direct procurement was 32.5 percent under that for the previous year. The largest percentage of these waivers was for marginally punched continuous forms, which are used over special alining devices, and miscellaneous items that are regularly carried in stock by dealers. The figures for this and the immediately preceding fiscal years are:

Activity	1945	1947
Printing and binding requisitions received.....	67, 886	74, 224
Blank paper requisitions received.....	4, 918	4, 816
Supply orders received.....	1, 700	1, 645
Standard-form orders received (Form 2390 for open jackets).....	5, 844	6, 133
Waivers issued.....	2, 912	1, 963
Expenditures on waivers by departments.....	\$1, 852, 903. 85	¹ \$1, 840, 479. 71
Cost of printing and binding, blank paper and supplies.....	\$47, 224, 867. 36	\$53, 009, 753. 69
Number of employees (close of fiscal year).....	49	55

¹ Amount expended on 492 waivers has not yet been reported.

DATED PERIODICALS

During the year, a concerted effort has been made to insure prompt issuance of all dated periodicals. With the cooperation of the ordering agencies and our production divisions, a performance record without precedent in the Government has been achieved. In the last 2 months of the year, every scheduled date for proofs has been met by the Office and only relatively few deliveries of the completed publications were behind schedule, even though these 2 months were probably the busiest of the year.

STABILIZING WORK LOAD

The extraordinary printing and binding requirements of the Eightieth Congress not only taxed the production facilities of the Office but also presented many problems in connection with the scheduling of departmental printing. It was necessary to resort to commercial procurement of a large volume of work, particularly composition. In many cases, however, it was possible to do the binding in the Office, and commercial contractors, after completing the press sheets on such orders, shipped them to us for bindery finishing. Plates or other reproducibles were also returned by the contractors to be available for future reprints.

Because of the large backlog of work on hand, the ordering agencies were frequently asked for additional time. While our requests sometimes were granted, in most cases the agencies insisted that the originally requested date would have to be met. Herein lies one of the most serious obstacles to stabilized production of public printing and binding. Usually within a few weeks after the adjournment of Congress, the volume of work drops to a point where it would be desirable to have a certain amount of filler. The Division of Planning Service has asked the several departments and agencies to advance some of their larger publications for production during the short slack season, and these discussions appear to be meeting with reasonable success.

During May and June of this year, the War Department submitted about 700 orders for reprints of their publications, in addition to their usual number of current requisitions. Through close cooperation of the Department and our planning and production divisions, a large percentage of these have been scheduled for Government Printing Office production at times when certain types of equipment are available and without delaying other pressing work.

REVIEW OF REQUISITIONS

An average of 300 different orders were received on every workday during the year. The Requisition Section reviews these to insure that they are in compliance with the printing laws, the rules and regulations of the Joint Committee on Printing, the decisions of the Comptroller General, and the standards of the Government Printing Office. All orders for printing of an informational nature, totaling 300,000 units (number of pages times number of copies) or more must be accompanied by clearances from the Bureau of the Budget. It is the Requisition Section's responsibility to see that the clearances have been made. The Section also enforces Bureau of the Budget Regulation No. 4, which establishes standard letterhead and envelope specifications and

places limitations on many other miscellaneous items. Requisitions for standard forms are checked for weight, color, and grade of paper, trim size, and color of ink, in order that deviation from approved standards may be corrected. On all new or revised accounting forms which carry the statement "Approved by the Comptroller General," final proofs are sent to the General Accounting Office for approval before printing.

This Section is also responsible for entering on the printing order the proper number of copies required by law for depository libraries, foreign exchanges, and use of Congress. The depository libraries receive only the classes of publications they have asked for, and consequently distribution lists vary with each order. The Section must add to the printing order all "rider" requests from agencies other than the one initiating the work. Unless the "rider" orders are added before the job goes into production, higher cost would result. Indicating the proper "distribution" involves following up hundreds of standing orders from various departments and from our Public Documents Division for many classes of congressional and departmental publications.

SCHEDULING COMMITTEE

A Scheduling Committee, composed of five printing technicians, representing each of the four planning divisions and the Office of the Production Manager, reviews every requisition received by the Office, and within 48 hours establishes a schedule for completion of the work ordered. No publication is put into production until this determination has been made. Before a final decision can be reached, it is necessary to investigate and answer the following questions:

Is equipment available in the Office for production of the publication in accordance with the requested delivery date?

Is the publication better suited to commercial production? If so, can the commercial supplier meet the schedule?

What production method shall be used? Is a combination of methods or sources to be used?

Is paper stock available? If not, can it be procured? Should a substitute be used?

Should recommendation be made for any change in the ordering agency's specifications to enable us to meet the schedule or to provide a more satisfactory job at lowest possible cost?

The committee also reviews requests for waivers in order to insure that the best interests of the Government are served by release. If it is more practicable for the Office to produce or procure the work in question, the waiver is refused. As a result of this close review, the granting of waivers has declined considerably, as shown in the table

on page 102, and release is usually given only for stock items or other specialty materials procurable through Treasury Department contracts. In some instances, it is necessary to release jobs on which schedules cannot be met. Proofs returned by the ordering agencies are routed through the Scheduling Committee for a check on changes and corrections which might alter the established production plan.

The scheduling of work, first undertaken by the Office during the war emergency, is one of the foremost steps to better service. Prior to the commencement of scheduling, a much greater length of time was required for production of an average publication, and in many instances a routine order might be shunted aside for several months, or even for as long as a year, to allow other publications, under pressure, to go through.

LISTING PRINTING PLATES AND REPRODUCIBLES

The Division of Planning Service was given a big additional assignment during the year. It has been preparing lists for each Government department or agency showing all plates, mats, negatives, and illustrations that were in storage for possible reprint orders. The departments and agencies were instructed to review the lists and indicate all items which would not be required for reprinting and which could, therefore, be destroyed. This action became necessary because over a period of years so many plates had accumulated in our Plate Vault that all available space was being utilized. There was a further need of salvaging metal and restoring it to production channels.

The lists were about 8 months in preparation, using the record cards of the Plate Vault Section and Planning Service Division's ledgers to get identifying data. A total of 95,000 different publications was reported. The departments and agencies have passed on 25,000 of them and have indicated that 17,000 sets of reproducibles, involving as many as a thousand plates on some of the larger publications, may be destroyed. If the percentage is maintained on the remaining 70,000 publications, there will be ample space for plate storage for many years to come, and a large amount of dead metal will be recovered.

To prevent further unnecessary storing of plates, ordering agencies are now required to specify on their requisitions how long reproducibles are to be held. At the expiration of this period, the reproducibles are destroyed unless a requisition extending the storage expiration date is submitted.

In preparing reproducibles-in-storage listings, it was discovered that the Reports of the United States Board of Tax Appeals involved the storage of stereotype mats and plates on 53 volumes, approximating

1,400 pages each. The reports frequently are reprinted for public sale and consequently mats had to be kept on hand for recasting of stereotype plates whenever plates became worn. New reports are received at the rate of two or three volumes a year. In the future, after the reports are printed, several press sheets will be run on paper suitable for camera reproduction. The sheets will be held until spare time is available for the making of negatives for use on future reprints. By the proposed method, savings in storage costs amounting to \$4,000 annually can be made on this group of publications.

PAPER SHORTAGE

The serious paper shortage during the year aggravated the problems of the Planning Service Division. It was almost the exception rather than the rule when a requisition could be processed to completion without the necessity of discussion and negotiations with the department on the question of paper. In order to meet schedules, frequent substitutions had to be made. Furthermore, grades, particularly as to general quality and color, were often so unsatisfactory that there were frequent complaints about completed publications. It is now not unusual for mills and suppliers to furnish three or four shades of paper in a skid of less than 2,000 pounds; sorting it out is impossible. Departments seem to realize the unsatisfactory paper-market conditions and have been very cooperative on the whole, but the Division is kept quite busy trying to maintain the good relations that are threatened by paper shortages and inadequacies.

The most embarrassing situation of this kind was caused by our inability to secure a sufficient amount of safety paper to keep production of money orders at a necessary level. Stock on hand was practically exhausted on March 1, 1947, and during the following 3 months there was continuous negotiation, through our Purchasing Division, with the limited number of processors who were able to produce paper of this kind. Post Office Department officials were in almost daily consultation with this Division. At the same time, our Money Order Section had to make numerous adjustments in its production schedules in an effort to keep up with requirements. Only in the final month of the fiscal year was sufficient paper secured to get production on an adequate schedule.

SERVICE TO DEPARTMENTS

There are from 6,000 to 10,000 different jobs in various stages of production at all times. It is the function of our Departmental Infor-

mation Section to keep constant record of their progress, to follow up the intermediate schedules, and furnish any reports on them required by the ordering agencies. Each step in the progress of a publication is reported from the production divisions by Telautograph, and this Section enters the reports on a control card maintained for each job. Any deviation from schedule is immediately called to the attention of the Office of the Production Manager for correction.

All memoranda from departments requesting changes in specifications on jobs already in production are routed to this Section, and its progress clerks are responsible for seeing that the work jackets are properly altered.

This Section also maintains Telautograph connections with several of the larger departments. During the course of a day, there are many inquiries by telephone from the approximately 80 departmental liaison officers.

This system of scheduling and follow-up of all publications is of immense benefit to the departments. Many of them have expressed complete satisfaction with it and are on record as desiring that it be continued. When a reduction in force in this Division eliminated a technical position connected with the servicing of one of the larger departments, it objected strenuously and at that time stated that it would fight any proposal to make further reduction in this Section, even declaring that it would go to the Joint Committee on Printing if there were a proposal to reduce the service by changing the system of reporting.

RELATIONS WITH DEPARTMENTAL PERSONNEL

It is believed that the Government Printing Office gets many unreasonable requests for delivery of printing because personnel within the ordering agencies do not sufficiently understand the organization of this Office and the technical aspects of production. Frequently orders for standard items are delayed until "there is only a few days' supply of forms remaining." Oftentimes our liaison is carried on with people whose experience has been limited to ordering of mimeograph or multilith work and who apply the same time limitations for printing that they would apply to that type of reproduction. The Division of Planning Service goes as far as it can to keep printing liaison offices in the departments and agencies advised of the service that can be rendered by the Office. They are told, whenever the opportunity presents itself, of the procedures which they should follow to get their printing in the speediest, most efficient, and economical manner and are invited to come to the Office for a discussion of their

problems before submitting requisition and copy. The Division of Planning Service is ready at all times to supply information or arrange conferences to deal with such matters as preparation of manuscript, illustration copy, schedules, methods of production, and other technical problems.

During the year, many group discussions and conferences were held with every large ordering agency and most of the smaller establishments for the purpose of setting up programs for the production of their jobs or for laying out the plans for unusual publications. These meetings, in almost all instances, were well worth the time expended and insured trouble-free production when the publications finally came to the requisition stage.

Following are a few excerpts from the many letters of commendation and appreciation that were received by this Office during the year, some of which were largely the result of arrangements established by group conferences:

It has been called to my attention by those members of my staff who maintain contacts with the Government Printing Office for the Federal Housing Administration that they have been receiving very courteous and efficient cooperation from the GPO.

This letter is simply to thank you and to let you know that I appreciate it, particularly in view of the very great pressure under which I know you are now operating. (Commissioner, Federal Housing Administration, January 9, 1947.)

* * *

I hope that you will accept for yourself and extend to your staff my hearty thanks and congratulations on the efficient and expeditious performance in printing the Medical Survey of the Bituminous-Coal Industry. The report is an excellent example of the printing art.

I have been gratified to hear from various members of my staff about the courteous and painstaking efforts of your printers and supervisors in getting the report out in record time. I deeply appreciate this spirit of cooperation. (Secretary of the Interior, April 24, 1947.)

* * *

I am writing to express appreciation for the splendid cooperation and excellent service rendered by your planning service and production staff in the recent hurry-up job of printing the report of the Special Session of the Judicial Conference of Senior Circuit Judges. (Chief Justice of the United States, May 6, 1947.)

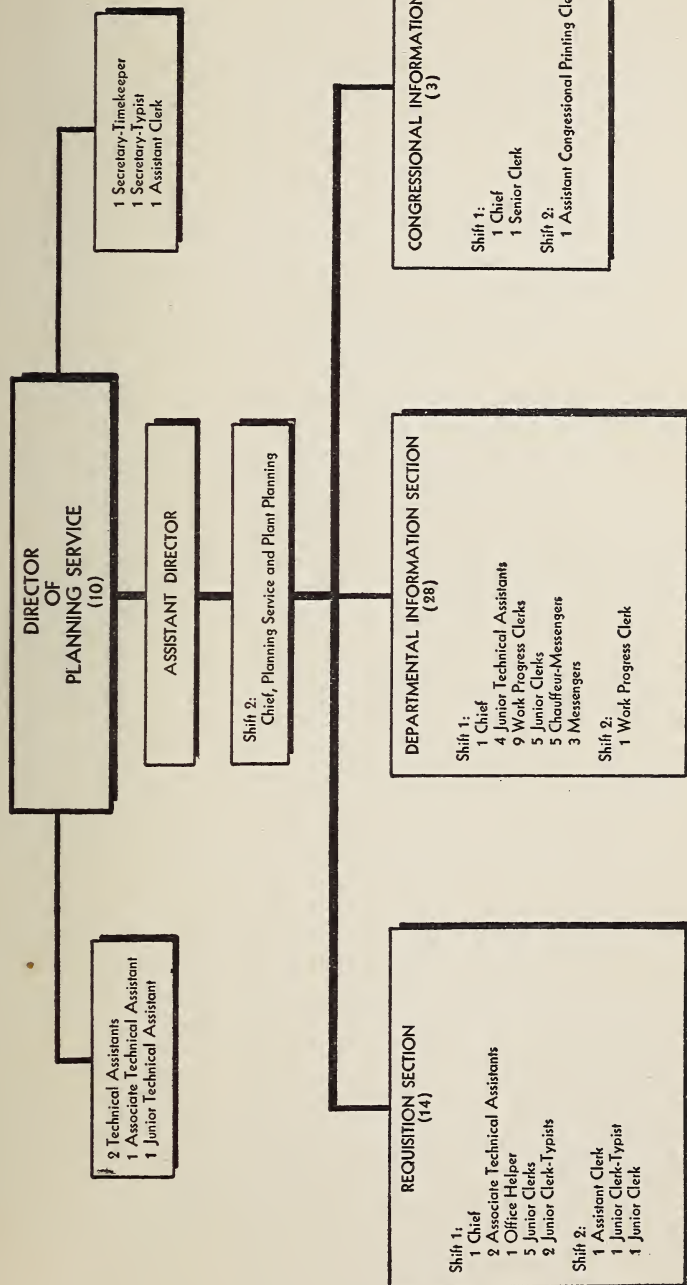
* * *

As Chairman of the President's Advisory Commission on Universal Training, I would like to express the great appreciation of myself and all the other members for the miraculous job which the Government Printing Office performed in publishing our report.

The rigorous time schedules which we fixed, the poor shape in which we submitted copy, and the unorthodox manner in which we used galley, and even page proof, as though it were a working draft, placed burdens on you and your Office which were heavy and may in many instances have appeared to be unreasonable.

PERSONNEL CHART

June 30, 1947



Shift 1	49
Shift 2	6
Total	55

Our requests would have been wholly unwarranted if we in turn had not been hastening to file our report within the time specified by the President and to make it as nearly a perfect document as we could under our own time limitations. For all the many inconveniences to which we put you, we apologize, and for the courtesy and efficiency of you and all the hundreds of other employees in the Government Printing Office who cheerfully accepted these inconveniences and still turned out our job on time, we express our very sincere thanks.

Because of the unusual and outstanding services rendered by the Government Printing Office in this instance, I am taking the liberty of sending a copy of this letter to the President. (Chairman, President's Advisory Commission on Universal Training, May 29, 1947.)

* * *

I am writing to convey to you the sentiments of the libraries receiving our Cumulative Catalog and to join with them in expressing appreciation of the expeditious treatment you are according it. Since the distribution of the January issue, subscribers have praised the prompt issuance of the Cumulative Catalog, emphasizing the importance of prompt publication to the usefulness of the catalog. The success which the Cumulative Catalog achieved so far is, therefore, due in large part to your efforts.

I also wish to express my appreciation of the ready cooperation which members of your staff have given the Library of Congress in preparation of the fifth edition of the Subject Headings and the Rules for Headings and the Rules for Descriptive Cataloging. (Librarian of Congress, June 11, 1947.)

* * *

It is with great pleasure that I inform you of the cooperation which the Commission recently received from members of the Planning Division of the Government Printing Office, and I wish to express the gratitude of the Commission for that cooperation of your staff.

This past week the Commission was faced with the task of filing a brief with the Court of Appeals for the District of Columbia, which has been completed but 3 days before the scheduled date of filing. The members of the Planning Service Division were extremely cooperative in arranging for the delivery of this brief in such a short period of time and I am happy to say that the brief was completed and filed on schedule. (Acting Chairman, Federal Communications Commission, June 11, 1947.)

PERSONNEL

The Planning Service Division had, on June 30, 1947, 55 employees, compared with 49 at the end of the previous fiscal year. About 10 per cent of the force is normally assigned to night duty or shift 2. A new position was created for processing of plate-storage cards. One employee (a veteran) is being carried on the rolls while going to school. One other employee, on detail to the Division during the previous fiscal year, has been transferred to the Division rolls. Three vacancies, not included in the 1946 figures, were filled during the year. The distribution of the employees by sections and the number in each classification are given in chart II.

DIVISION OF PLANT PLANNING

The functions of the Division of Plant Planning are performed by 75 employees, working on 3 shifts in 5 sections. The distribution of the employees by sections and the number in each classification are given in chart III.

For every printing and binding job processed by the production divisions of the Government Printing Office, Plant Planning must lay out a production scheme, prepare an estimate, designate paper stock, write and review a work jacket, assign each publication to specific press groups or other equipment, and establish dates for the intermediate schedules which control the flow of work. It also controls the ordering and utilization of paper and fills departmental requisitions for blank paper and miscellaneous supplies. The functional scheme, by units, is given in chart IV.

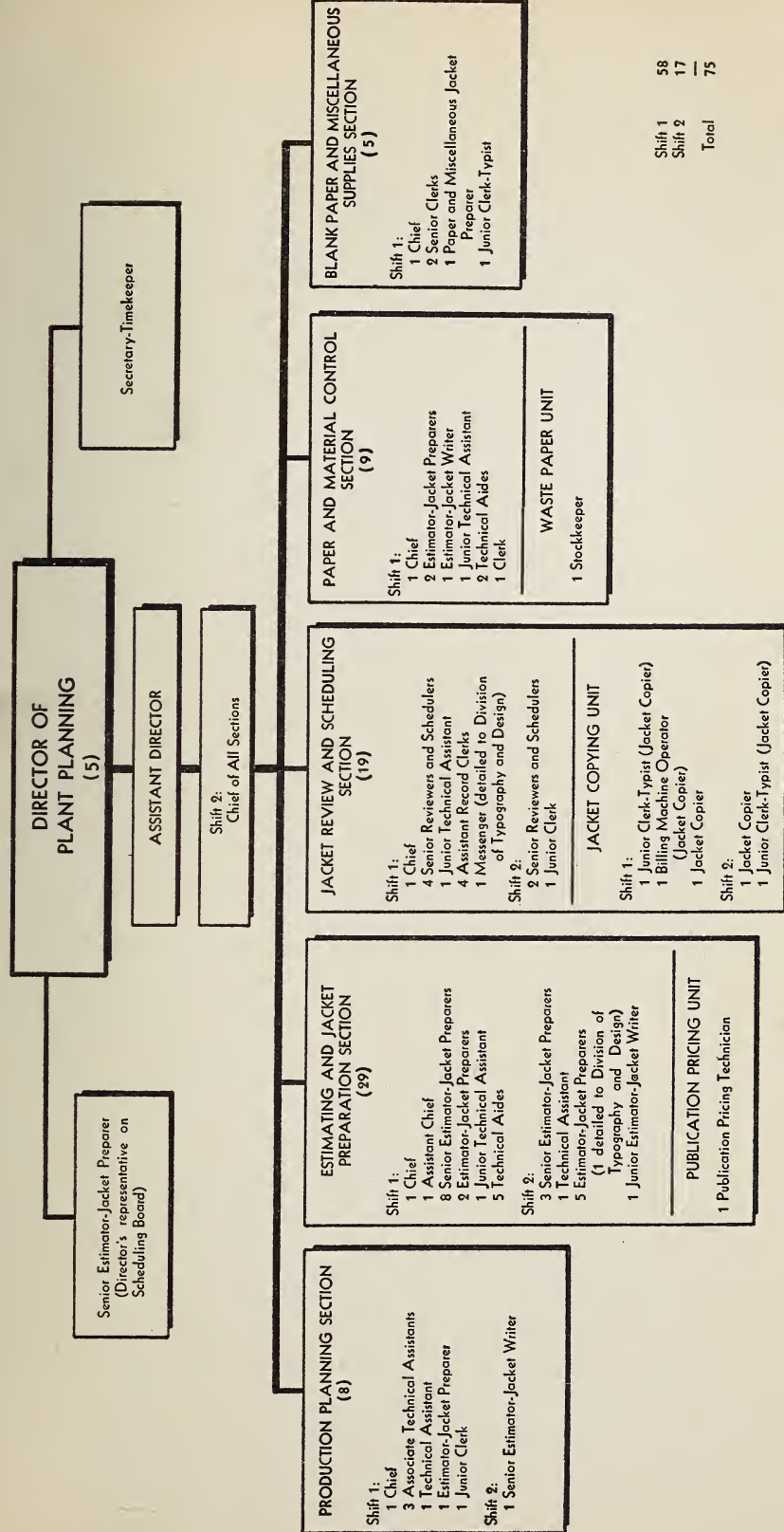
During the year the Division made 38,730 estimates and prepared 51,390 work jackets. It also processed 1,448 print orders (suborders) on which individual jackets and estimates were not prepared. Comparative and informal estimates are not included in the foregoing figures nor do they show the very large number of jackets handled two or more times because the plan for printing and binding operations subsequent to type composition had to await approval of galley and page proofs.

The administrative order creating the Division in 1943 was the result of conditions and requirements that completely outmoded the then-existing planning organization. It added many entirely new functions and procedures in order to meet the departmental demands for unprecedented service. There was no made-to-order pattern in the printing industry for the Division to follow. Only minor changes have since been found necessary in the original reorganization plan. An effort will be made in the report of the Division's operations to show what changes have been made, why they have been considered necessary, and what has been accomplished by them.

PREORGANIZATION PLANNING PRACTICES

Prior to the establishment of the Plant Planning Division as presently organized, no attempt was made to schedule proofs or delivery of all publications. The Office followed the time-hallowed custom prevalent in nearly all manufacturing plants of keeping equipment change-overs at a minimum by running through all work of one class before turning to another. As long as this practice met the Government's service requirements, it was the easiest way and

June 30, 1947



Shift 1 58
 Shift 2 17
 Total 75

DIVISION OF PLANT PLANNING

FUNCTIONAL CHART

June 30, 1947

OFFICE OF DIRECTOR OF PLANT PLANNING

Directs supervision and coordination of all functions in Division.
Establishes policy and procedure and maintains file incidental to them.
Serves on standing committees, such as Scale of Prices, Paper Specifications, Scheduling, etc.
Maintains pay-roll reports, leave records, etc.

PRODUCTION PLANNING SECTION

Receives jackets and department requisitions for plant production.
Determines general plan and method of production.
Prepares preliminary schedule for performance of work.
Assigns grade, color, size, and weight of paper.
Assigns grade and color of covering material for cased books.
Consults with departments and Office divisions on problems of production.
Establishes size and quantity for purchase of special paper items.

ESTIMATING AND JACKET PREPARATION SECTION

Receives jackets and department requisitions from Production Planning Section and records movement through sections.
Computes estimated cost of each order.
Writes specifications and instructions on work jackets for plant production.
Maintains master specifications and instructions for repetitive publications.
Prepares purchase requests, approves bids and acceptances of delivered product for specialty items.

PUBLICATION PRICING UNIT

Establishes selling price of all publications and forms sold by Superintendent of Documents.
Determines charges to be made to Members of Congress for printing ordered by them.
Furnishes informal estimates to Congress and departments as requested.

JACKET REVIEW AND SCHEDULING SECTION

Reviews plan, jacket, and department requisition for correctness; reviews estimate for correctness and accuracy of cost and time.
Indicates on jacket dates necessary to complete each operation to meet department delivery request.
Indicates technical storage information on jacket and storage card.
Posts and records scheduling and storage information.

JACKET COPYING UNIT

Transcribes, by typing, complete information from work jacket to white jacket and necessary carbon copies.
Delivers jackets and carbon copies to proper destinations.

PAPER AND MATERIAL CONTROL SECTION

Controls purchase and movement of paper for inventory purposes.
Prepares purchase requests and approves bids for special paper items.
Is central source of information as to paper and various binding materials.
Furnishes information to Statistical Records Section for maintenance of Daily Paper Inventory.
Maintains regular and supplement paper catalogs.
Controls acceptance of paper items declared surplus by Federal agencies and establishes basis for selling price.
Utilizes surplus, supplement, and regular stocks by substitution.
Maintains necessary records for centralized control and information.

WASTE PAPER UNIT

Receives and utilizes all stock classed as waste.

BLANK PAPER AND MISCELLANEOUS SUPPLIES SECTION

Receipts and records orders for blank paper and miscellaneous supplies.
Estimates cost of each order.
Writes and schedules all jackets for performance of work.
Issues releases for specialty items of ink and blank paper when necessary.
Maintains blank-paper and envelope catalog.
Maintains sample paper cabinet.
Manages and controls standard-forms and miscellaneous-supplies program.
Maintains progress records of orders.
Contacts departments relative to blank paper, standard forms, and miscellaneous supplies.

probably the cheapest. In the relatively few cases in which the ordering agency requested delivery by a given date, the request was carried on the jacket, and production supervisors were expected to follow up the job and see that the date was met. In the first years of the war the requests, of course, became much more frequent and were eventually responsible for the introduction of scientific scheduling.

Requisitions were not necessarily processed through the Planning Division in the order received. Weeks or months might pass before even a jacket number was assigned to orders received in a routine manner. Under these conditions the departments had no way of knowing even approximately when their jobs would be delivered. Often as many as 3,000 or 4,000 requisitions were on hand, waiting to be processed. By contrast, there are now very seldom more than 500 unwritten jackets on hand at any one time, and they are processed in the order of their urgency.

Several methods were tried in an effort to keep orders current. A weekly "low jacket number" was designated so that all jobs up to that number could be worked on during the week. A "60-day jacket" list was issued periodically in an effort to complete all jobs over 60 days old. Obviously, neither of these plans was completely workable, since they did not take into account the variety of jobs, the amount of work to be done on each, or the department's delivery needs. These procedures were based entirely on the sequence of jacket numbers.

Another system added a penalty charge on work which could not wait its turn. At first, this charge was 50 percent; later it was cut to 20 percent. Agencies with limited funds were at a disadvantage.

Early in the war, congressional speeches, bills, and hearings were taken care of by a small night force and then, as now, were produced under terrific pressure. Several employees had to be added to the night shift to expedite congressional deliveries.

NO REAL PLAN FOR PRODUCTION

The specifications carried on department requisitions were seldom questioned by jacket writers, and jobs were repeatedly reprinted without considering possible economies in use of paper or choice of methods. There was insufficient planning personnel and no procedure for careful production planning. Jackets were little more than shop orders.

The number and kind of plates to be made or mended, the size of the press sheet, and the size or kind of press to be used were left to the discretion of production supervisors at various levels.

When jobs were ready for press, they were imposed and assigned to

the press which needed work. Efforts to match paper sizes with press capacity were casual.

Bindery sections used their own judgment on ganging books or forms for folding, punching, perforating, and other operations, as well as the methods to be used.

These decisions were made by qualified craftsmen, but they were handicapped by lack of information on over-all Office work loads and objectives as well as departmental requirements. Furthermore, they used time which could better be spent in production or supervision.

The jacket writer had no authority to specify production methods. His work consisted principally of transferring from the department requisition to the work jacket information concerning such items as the trim size, the quantity ordered, the color of ink, and the quantity of paper. On book work, paper quantity was estimated and the notation "Issue as required" left the pressroom discretion to draw stock as it saw fit. A few other notations, such as "Plates on hand," "Make plates," or "Mend plates," were inserted. Many jackets were merely marked "Set or mend as necessary."

Additional items of information now put on the work jacket have relieved the production divisions and have helped to assure that the departments get the maximum of printing and binding for the funds expended.

Cost estimates were not based on the method of production but on flat rates and scales. No estimates were made on depository orders or Superintendent of Documents riders, and very few on departmental riders. Dated periodicals were seldom estimated because complete copy was not received until after production had been started.

However, an estimate was made on each order for miscellaneous supplies, such as ruled tablets, stock blankbooks, and stenographers' notebooks. These estimates have been eliminated as unnecessary, since the prices are shown in our Catalog of Standard Forms and Miscellaneous Supplies.

After they were written, the jackets were checked for omissions by the head jacket writer. He was not a technician, so there was no review of jackets for technical errors. No date was set for each division to complete any given jacket, so some jobs were processed quickly, while others lay for long periods of time in each division or section, depending on the work load or the type of work to be done, without considering the needs of the ordering agencies.

The Planning Division had no control over the sizes, grades, weights, or quantities of paper ordered by the Government Printing Office. This was done by the Purchasing Division, which had no connection with the planning of work for the presses and other equipment, nor

with the determination as to what paper stock was to be used on any particular job. Consequently, many of the stock-sheet sizes were not suited to economical production and some of the grades and weights were not in keeping with the end use of the products.

Each jacket writer assigned the size and quantity of paper to his jobs as he saw fit. He did not know whether the necessary quantity of a particular grade was available, or would be available at the time the job was to go to press. Under this method, if a jacket specified a 32- by 42-inch sheet, a 21- by 32-inch sheet might be drawn and printed, regardless of the quantity involved, thus doubling the press run.

The Purchasing Division ordered replenishments based on past use of each grade of paper without regard to the fact that many large jobs were one-time orders. Uneconomical sheet sizes were repurchased because they had been run before. The press was made to fit the paper size instead of buying sheets to fit the press.

This system was bad enough even when paper was plentiful and manufacturers were anxious to bid on Government contracts, but under present conditions of paper shortages, reluctance of bidders, and slow, uncertain deliveries of paper, it would be entirely unworkable.

Before 1940, it was the Office policy to carry in the Stores Section small quantities of certain standard forms for emergency issue only. The general practice was to print each form as required for a specific departmental jacket in quantities ranging from 5,000 to 1,000,000 copies. Stock books, pads, tablets, stenographers' notebooks, etc., were stored by the bindery and issued upon receipt of jackets specifying such items.

To insure economical manufacture, it was decided to print an estimated 3 to 6 months' supply of all standard forms and miscellaneous supply items. We centralized the control of the program in the Blank Paper and Miscellaneous Supplies Section and the storage and issue of it in the Stores Section. All stock items carried by Stores are now included in our Standard Forms and Miscellaneous Supplies Catalog, which contains 437 items, as compared with 157 listed in issues of several years ago. The practice of printing such items on departmental jackets was discontinued upon establishment of the new policy.

ACCOMPLISHMENTS UNDER NEW ORGANIZATION

The operating expense of the Division for the fiscal year 1947 was approximately \$283,000. The exact figure cannot be determined because this Division and the Division of Planning Service are combined as one group on the second shift.

For a period of 27 months, July 1943 through September 1945, this Division kept a record of the comparative cost of jobs as specified by the ordering agencies and as produced with our recommended changes. For this period the average annual savings were 61,072 man- and machine-hours and 648,000 pounds of paper. The average annual monetary saving was \$294,196, more than the entire Division overhead. Many of these economies are recurrent because of frequent reprints, and the same savings are being made daily on new jobs. The figures used here apply only to the savings brought about by recommending changes in a publication that would reduce its cost and do not take into account the Division's normal function of selecting the most economical production method for every job printed, due consideration, of course, being given the ordering agency's specifications.

Two War Department jobs will serve as examples of the hundreds on which savings are regularly made by reviewing the specifications.

The Department submitted a request for 17,750 copies of a training manual. The specifications called for 16- by 10½-inch trim size and 544 pages printing as right-hand pages only, or a total of 1,088 paper pages. Our planners, reviewing the specifications, recommended a trim size of 14 by 10¼ inches, which permitted more pages out of a press sheet. It would fold down to larger signatures with subsequent savings in paper, presswork, and bindery operations. The Department's acceptance of this suggestion and of our further recommendation that the manual be printed face-and-back resulted in a saving of 115,576 pounds of paper, 3,676 man- and machine-hours, and in a reduction of \$23,306.78 in the cost of the job.

The War Department requisition for a publication entitled "Preventive Maintenance Practices for Ground Signal Equipment" called for 390,275 separate-cover copies. When the "O. K.-to-print proofs" were received, it was discovered that the pamphlet made 34 text pages. Because of the large number of copies, this pamphlet was an ideal job for our magazine web presses, except that 34 pages and cover required working the job in 2 loads, 1 of 32 pages 2-up and 1 of 4 pages 8-up. In addition to this, a flat-bed run of the cover 4-up would have been necessary. The covers would be folded and the two signatures and cover placed on an inseting machine and saddle-stitched. By a little resetting and elimination of white space, the pamphlet could be run back into 32 pages including cover. The War Department agreed to the condensation and the elimination of the separate cover, with the result that the pamphlet was run 32 pages 2-up on one magazine web press in one load and saddle-stitched on the press. Adoption of our recommendation reduced the cost of the job by \$3,797.

Under present practices, plans always provide for filling equipment to its capacity. In many instances this has been accomplished by running small-size, large-order jobs, such as money-order applications, in the waste press space.

PAPER CATALOG AND INVENTORY

A new sheet size, 40 by 52½ inches, which is a multiple of the most common form size, 8 by 10½ inches, has been established. Use of 11,000,000 sheets of this size during the fiscal year, based on face-and-back printing of 25 forms to the sheet, compared with 16 or 18 on previously stocked sizes, has saved 5,278 machine-hours. This saving will continue year after year.

In some instances items used for specific jobs were reduced in size to an absolute minimum, which effected a considerable saving. As an example, a sheet size of 24 by 32 inches of a 70-pound M. F. paper was used for congressional bills. Research by our Plant Planning Division disclosed the fact that it could be reduced to 22½ by 31 inches, which results in a saving of 6 pounds of paper for every 1,000 sheets used. The normal consumption is approximately 8,000,000 sheets annually. On the basis of 6 pounds per 1,000 sheets, a saving is made at the rate of 48,000 pounds a year.

The control and maintenance of our Paper Catalog and Inventory of regular items was the responsibility of the Purchasing Division prior to transfer of these functions to the Division of Plant Planning. The change placed the responsibility with this Division of determining and assigning to each job the grade, color, weight, and most economical size of paper to be used in manufacture.

The number of items regularly carried in stock has been reduced from 728 to the present listing of 499, thereby saving space and reducing warehousing problems and record keeping. The smaller figure includes a few new items which were added to establish a well-balanced inventory, with a range of choice sufficient to satisfy the requirements of practically all jobs.

Mimeograph paper is being purchased ½-inch oversize to permit trimming of battered or rough edges, thereby eliminating trouble in further machine processing by the ordering agency. Changes in prime stock sizes, in order to attain the most economical number of standard-size cut sheets, has brought mimeograph-paper savings to 73,000 pounds annually.

Many orders for letterheads are received which require use of the letterhead form on mimeograph paper. Having sizes of mimeograph paper conform to standard sizes in writing and bond papers, except for

the extra trim, results in further economy by eliminating reimposition and additional make-ready for a different sheet size.

Sizes of cover stocks, ledger, and index have all been changed to provide better press fills or more economical lay-out.

Inventory control is more positive by centralization in the Division having the best knowledge of equipment capacity. Accurate methods of estimating paper requirements result from use of tabulated reports of past use, quantity obligated for work in process, and quantities on hand and on order.

A study by this Division of the causes for shortages and spoilages placed the responsibility in a majority of cases on the inequities and lack of uniformity in our Paper Allowance Chart.

This chart, as revised by us in cooperation with the Office of the Production Manager and the Division of Accounts, is reducing shortages and overs in production. It has almost altogether removed the necessity for returning to press to make up shortages.

The method of securing Superintendent of Documents rider orders has been revised with the result that the Procurement Section of the Documents Division now has ample time and information to order additional copies of department publications before the department order is completed. By this arrangement, achieved through changing the notification form, both confusion and expense are reduced.

Cooperation between divisions in the Office has resulted in adapting the offset process to printing of ruled sheets for cash books, ledger books, and other record forms usually done on bindery pen-ruling machines. Printing of down lines, faint lines, and headings in one operation and one color has been responsible for tremendous savings.

Offset production permits printing of a sheet double the size possible on a pen-ruling machine. Folding, gathering, and sewing operations are halved, and proportionate savings are effected throughout the manufacture of such jobs.

Not all pen-ruling work is economically adaptable to offset printing. Short-run work, ruling work only, and jobs with no bindery operations may still be produced more economically by bindery ruling.

The letterpress and offset printing standards, which are of great assistance to the departments in planning or preparing copy for their publications and to this Office in simplifying production and controlling costs, were worked out by our Division of Typography and Design in collaboration with this Division. The more economical plate-mend and plate-storage procedures now in effect are partly the work of Plant Planning representatives.

PRODUCTION PLANNING SECTION

In addition to determining the general plan for each individual job received in the Office and preparing a tentative schedule for it, this Section has investigated many of the broader problems of planning and production during the year. It has, for example, devised a lay-out for producing 20-page pamphlets of document size in quantities of 5,000 or less by the offset method. As formerly laid out, this irregular number of pages resulted in excessive folding charges, but under the new plan the pages are combined into regular signatures that present no production problem.

This Section is investigating the possibility of increasing the maximum of pages to be saddle-stitched. Test runs on 64-page folds have been favorable. If the tests continue to be satisfactory, the plan will eliminate much insetting and costlier side stitching.

Construction of a complex War Department technical manual has been redesigned to simplify and expedite production. In the last 6 months of the fiscal year, three orders totaling 385,000 copies have been received for the improved manual.

The consultant on methods and procedures and representatives of the production divisions recently requested that this Section study the effect of imposition or lay-out for press on the economy of subsequent binding operations. The purpose of the investigation is to determine whether jacket writers should make up a dummy of all publications for insertion in the work jacket. There is a question whether the advantage of this explicit designation of imposition and folding would not be offset by the loss of freedom production supervisors now enjoy in determining the most economical method according to work loads. The proposed practice would also add to the work of this Division. The Imposition, Presswork, and Folding Guide, which was developed during the investigation, will be useful in revising the production divisions' Imposition Book and will be made available if it proves advisable to adopt the recommended jacket procedure.

The old requisition form, used by the departments for many years, was not suitable for complete description of jobs ordered. The form was redesigned by the Division of Typography and Design in accordance with changes made in the items by this Section. Its approval by the Bureau of the Budget and adoption by departments for requisitioning of printing and binding has eliminated many misunderstandings and resulted in clearer specifications.

Production of many department forms, memo books, stenographers' notebooks, tablets, blankbooks, and miscellaneous items of printing have been improved and expedited through the work of this Section.

It has made many suggestions which are being adopted into our revised Scale of Prices, provided assistance on special assignments of other divisions, and helped with many problems of ordering agencies.

ESTIMATING AND JACKET PREPARATION SECTION

Besides the routine work required of this Section, as indicated by its title, it has done a great amount of work for the departments and for other divisions of the Office. For example, 1,281 informal estimates made during the year show the extent to which the ordering agencies look to it for guidance in preparing and planning their publications prior to ordering. It provides similar service for congressional committees and Members of Congress, and prices all sales copies for our Superintendent of Documents. It is the planning section most closely connected with the individual production divisions and sections, and its work plans reflect the benefits of close contact and cooperation with production supervisors.

JACKET REVIEW AND SCHEDULING SECTION

Working with visible record boards that show every job in press or scheduled for press production, this Section has been able to reduce delinquencies in the Presswork Division almost to the vanishing point. It also stabilizes the work load in press groups in such a manner that congestion is avoided even though the flow of orders into the Office is extremely irregular.

Equipment other than presses is less susceptible to scheduling by individual units, but records are kept of capacity and work on hand so that the same general application of scheduling insures completion of work on the dates established.

Because of our familiarity with plant conditions, the planning of many large jobs, such as the income-tax forms and the Pearl Harbor hearings, is handled entirely within this Section. On these two jobs, as on many others, smooth, economical, and prompt production was achieved.

Clerks trained within this Section are now doing many jobs which were at one time the responsibility of technicians, employed at much higher grades of pay.

Applications for domestic money orders are produced for the Post Office Department at the rate of about 400,000,000 annually, with delivery spread over the entire period. Great savings of paper and in press-hours have been made by running these in combination with other forms.

Reviewing of all jackets by this Section keeps errors at a minimum and helps to insure that the Government gets better printing and binding more efficiently and economically in this Office than it could possibly get from any other source.

PAPER AND MATERIAL CONTROL SECTION

A section chief and eight employees controlled the ordering and issuing of approximately 180,000,000 pounds of purchased paper stock; also of 3,132,392,767 sheets of paper, 6,035,500 envelopes, 139,730 yards of tracing paper and cloth, and 4,409,211 pounds of roll stock secured from war surplus. This Section turned the surplus to good account by having it utilized in production, thus helping to maintain normal inventories and reducing the need for purchase of prime stock. It also disposed of \$45,000 worth of usable waste as a substitute for prime stock, and has greatly reduced odd-lot stocks and discontinued and obsolete paper items.

A survey of some regular stock items was made to determine if changes in size were necessary for better utilization. As a result, several changes were made in sizes. Additional sizes were added for capacity production on the new L-type disk ruling machine that is now being erected.

To achieve better quality of illustration work in printing by the off-set process a new grade of paper (litho offset coated) was added.

BLANK PAPER AND MISCELLANEOUS SUPPLIES SECTION

This Section, consisting of a chief and four clerks, processed orders, requisitions, estimates, and jackets for paper and supplies representing more than \$7,000,000 worth of business in the past year. The comparative figure for 1939 was \$1,658,733. It disposed of 17½ million pounds of surplus paper to departments. All the liaison necessary to service the Government's blank-paper needs was carried on by this Section. It should be added that prior to the establishment of the present organization these orders were received on printing and binding requisitions and all the work of processing the orders was done by craft technicians at much higher rates of pay.

DIVISION OF COMMERCIAL PLANNING

The Division of Commercial Planning was established for the purpose of setting up and reviewing cost estimates, specifications, and schedules for all printing and binding procured from commercial sources. Its tech-

nical personnel must be familiar with the equipment of contractors so that the production plans it prepares will be in conformity with available facilities. It certifies bids taken by the Purchasing Division, selects the best and lowest bidder, and maintains progress-of-work records before the award is made and during the time the successful bidder has the job in production, performing these and related functions in collaboration with our Accounting, Purchasing, Production, and the other three planning divisions.

COMMERCIAL PROCUREMENT OF PRINTING

The Public Printer is authorized (sec. 111a, title 44, U. S. C.) to produce, under contract made by him, with the approval of the Joint Committee on Printing, such printing, binding, and blankbook work as he is not equipped or able to do at the Government Printing Office.

The policy adopted during the war is being continued: If the Government Printing Office cannot produce any job as well, as expeditiously, and as economically as it can be procured from commercial sources, production in the Government Printing Office plant represents an unjustifiable waste of the taxpayers' money. Such a job should not be undertaken in the plant; the Government interests can be best served by buying it outside. Enforcement of this policy explains the continued relatively large operation of the Division of Commercial Planning. A considerable proportion of the requisitions routed for commercial procurement is for specialties manufactured on custom-built equipment; color work, for which the Office has limited facilities; or book and job work required to be delivered promptly to points or areas outside the District of Columbia, where large commercial printing firms are available. The income-tax forms provide a pertinent example of the last-named class, where the saving of time and transportation charges far outweighs the cost of processing the orders through the Commercial Planning and Purchasing Divisions.

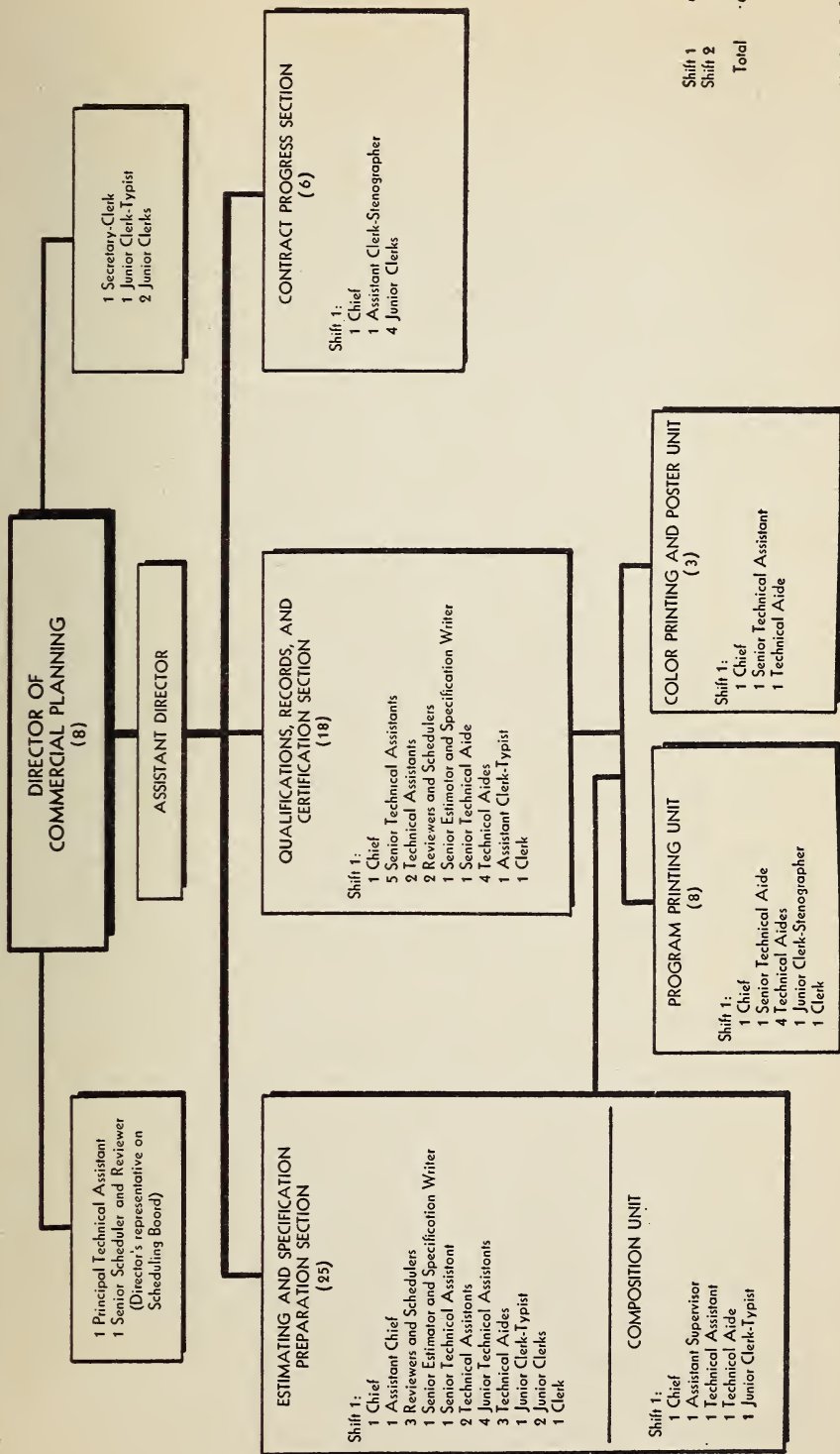
This policy was formulated in discussions with the Navy Department in 1943, when its publication officials sought blanket waivers for commercial procurement, although it had been expressed in a more general way many times before. The relative economy and efficiency of commercial procurement as opposed to Government Printing Office production are actually the criteria by which the plan for every job is considered.

The Public Printer's Administrative Order 14, creating the planning organization substantially as it now exists, provides in part:

* * * the Requisition Section, in collaboration with the Director of Commercial Planning, the Director of Plant Planning, the Director of Typography and

PERSONNEL CHART

June 30, 1947



Shift 1 68
Shift 2 0
Total -68

CHART V



Design, and the Production Manager, or their representatives, will review all requisitions from departments for delivery of proof or the finished product and will make a determination of the work to be produced within the Office, procured under contract, or released on waiver. This review shall be performed on each requisition within 48 hours from the time of receipt of the requisition in the Government Printing Office. A written statement shall be made recording the decision.

The Public Printer frequently has pledged a continuance of this policy to the employees of the Office, to commercial suppliers, and to customer agencies of the Office. This pattern of control tends to satisfy the ordering agencies, keeps down commercial criticism of Government in business, and assures the most favorable service to the Government.

The fiscal year just passed has been one of considerable readjustment, caused by reductions in force of approximately 37½ percent and the expected postwar shrinkage in the kinds of Government printing and binding handled by this Division during the war years. On June 30, 1945, there were 213 employees, including those in the warehouses, engaged in work now handled by this Division. On June 30, 1946, it had 104 employees. At the end of the fiscal year 1947 the Division had 68 employees, whose assignments by units and position titles are given in chart V.

Because of fluctuations in work and need for assistance by other divisions of this Office, as well as other Government agencies, many employees were detailed out of the Division during the year. The reduced force will probably prevent our continuance of this practice to so large an extent in the future.

Details of all employees totaled 16,624 hours, equivalent to 2,078 8-hour workdays.

Our entry into the field of contracting for snap-out and other specialty forms has accounted for approximately 25 percent of the work handled. Many printing programs have been discontinued, and all have been reduced in volume except the War Assets printing program, which continues to be very large.

The reduction in the volume of program work was due principally to a gradual conversion throughout the year to bidding on all operations, or grouped operations, of jobs, rather than placing individual orders for each component part of a job. For instance, when we had our warehouses in key printing centers, separate orders were regularly placed for photoengraving, typesetting, electrotyping, presswork, and binding. We have been grouping all these into one bid, or, in some instances, combining photoengraving, typesetting, and electrotyping. The number of individual orders placed in the fiscal year 1946 was 9,550; in the fiscal year 1947 it had dropped to 7,622.

Curtailed use of our standard-rate-contract method of operation has required more time in preparing proper specifications for bidding.

We have had to readjust our organization accordingly. The very difficult problem of developing specifications and procedures for the bidding of composition, photoengraving, and electrotyping has been satisfactorily met. Our multiple-award contracts for snap-out forms are also working well.

While our personnel was reduced approximately 37½ percent during the year, the monetary outlay for work handled declined only about 10 percent. The Accounts Division reports \$12,906,982.98 paid to contractors in the fiscal year, against \$13,940,131.12 in the previous year and \$27,400,941.53 in 1945. These figures do not include cost of paper and other materials and supplies furnished to contractors, which in this fiscal year totaled \$2,831,095.

The break-down of orders, by general classification, for the fiscal year 1947, not including memorandum orders, is as follows:

Printing and binding-----	5, 597
Composition-----	557
Composition, plates, and printing-----	12
Composition and photoengraving-----	94
Composition and plates-----	35
Composition, printing, and binding-----	22
Composition, photoengraving, and plates-----	6
Hold type forms-----	274
Plates, photoengraving, and printing-----	17
Plates, printing, and binding-----	13
Plates-----	250
Photoengraving-----	162
Special packaging and mailing-----	13
Specialties not included elsewhere-----	11
Change (supplemental) orders-----	559
Total-----	7, 622

SAVINGS ACCOMPLISHED

One of the primary purposes of planning is to devise a plan for production which will result in a lower cost for each job. As a result of proper planning, including comparisons of estimated costs for several methods of production, savings are made daily, on a great majority of jobs, as a matter of routine. This and the other planning divisions are at all times on the alert for better and cheaper methods.

To report all savings through planning, it would be necessary to record the detailed studies given to the thousands of jobs that we handle each year. In many instances the savings effected for an individual job are small. Large jobs lend themselves to big savings. The problems and the applications of planning vary with almost every job, and it is not practicable to list in detail all the savings that have resulted from planning by this Division; a random sampling will suffice:

Bond sales pamphlet.—Our work on this pamphlet for the Treasury Department shows the benefit of using specialty equipment not available in the Government Printing Office because of limited demand, as well as the value of employing technical planners familiar with commercial methods.

By utilizing the rotogravure process, which affords fast and economical production of certain kinds of jobs, these pamphlets were obtained for \$25,226.98 less than Government Printing Office plant cost would have been. A slight change in the page size was made to fit rotogravure equipment common to all the larger and principal rotogravure firms. A vacuum news stock could be used by rotogravure and still retain excellent reproduction of the halftones, whereas more expensive paper would have been necessary for the letterpress or offset processes of production.

This requisition called for 10,000,000 copies of a 16-page pamphlet, 3¾ by 9 inches. Eight of the pages were to be printed in two colors.

After the Division of Plant Planning estimated the cost of producing the pamphlet by six different methods in our plant, on various papers suitable for the job and by the processes available, the task was then presented to Commercial Planning, in order to determine whether the job could be procured more economically from commercial sources.

It was obvious to this Division that the pamphlet was a "natural" for rotogravure, provided that certain necessary changes would be permitted by the ordering Department.

We proposed two changes which would in no way affect the usefulness of the pamphlets: (1) Reduce the page size to 3¾ by 7½ inches to fit big rotogravure equipment of all principal plants, so that a maximum number of copies could be obtained from standard-width paper and regular delivery sizes; and (2) use vacuum news stock, which would permit excellent halftone reproduction without impairing the advertising value of the pamphlet. Since paste would not permit the booklet to open flat, a wire-stitched product was necessary; otherwise, even greater economies would have resulted.

The bill to the Department for the job, as produced under Commercial Planning Division specifications, was \$61,232.54, against \$86,459 for the cheapest method of production on equipment available in the Government Printing Office, or a saving of \$25,226.46.

Bound snap-out job.—This Veterans' Administration job called for 5,000,000 sets of a 4-part carbon-interleaved snap-out form, to be bound into books of 25 sets each. The requested delivery date was too close for so large a job, but the Administration asked us to proceed on the basis of original specifications and schedule. The time that

would be required for binding the forms into books was considerable, and we felt that a premium price would be asked for the job. Of the 11 largest firms in the country who manufacture such work and who were asked to bid, only one company quoted a price—\$15 per 1,000 sets, or a total of \$75,000.

We considered this price excessive and asked the Veterans' Administration to reconsider specifications and schedule to provide: (1) Acceptance of books of 50 sets each, instead of 25, thereby substantially reducing binding costs; and (2) allowance of additional time for delivery.

The Administration accepted our suggestions, and we again advertised the job. This time five bids were received. The low bidder's price was \$6.12 per 1,000 sets, or a saving of \$8.88 from the earlier bid.

The job cost \$44,400 less than the original price, and the saving will be duplicated on reprint orders in the future.

Change in construction.—A State Department requisition called for two jobs containing a hand-inserted "hecto" or spirit-duplicator carbon which was narrower than the printed sheets. The sheet of carbon could be eliminated by processing the carbon on the back of one of the regular printed sheets. In the past, the Office had usually issued waivers for this kind of job. When the two requisitions were first presented to Commercial Planning in 1946, the Division recognized that as specified it was necessarily a hand-gathered article, whereas an equally good machine-made product was available for less money. The Department was asked to accept either construction, whichever could be obtained for less money. It refused to consider the suggested change.

When the job came in again, in March 1947, we again asked the Department to consider the matter. Its representative informed us that an official had once soiled his shirt in using the kind of form we were proposing, and the bureau concerned, therefore, was insisting on the construction they had ordered. Such an accident could happen in using the carbon in any form of construction. We submitted an estimate to show the possible saving. Our proposal was finally accepted. This not only permitted the use of a form that we had found to be satisfactory but opened the field of competition to producers of both kinds of finished product.

The lowest bid as originally ordered in 1946 was \$5,390.83; but, with the changed construction, it was bought for \$4,897, at a saving of \$493.83. The Department has expressed no dissatisfaction with the forms.

Recruiting booklet.—The War Department ordered 250,000 copies of a 44-page booklet (40 pages, plus 4 cover pages), size 10½ by 8¼ inches, with 4-color-process illustrations on 43 of the 44 pages.

Prior to this order, the printing and binding requirements of the War and Navy Departments for recruiting programs had not been obtained from or through this Office. However, the Chief of the War Department's Publishing Section was successful in routing this job to us after it had been determined that our cost would be less than if the advertising agency were allowed to procure the printing. According to information furnished to us, the advertising agency's quotation was \$12,000 higher than the successful contractor's bid.

It is believed that part of the savings can be attributed to precise specifications setting forth exactly what art was to be furnished and the careful description of the work to be performed.

We required that art be furnished in complete form, ready for camera, rather than in hundreds of separate pieces. These separate pieces had to be assembled by the engraver into illustrations for the 44 pages and consisted of separate art for (1) full-color backgrounds, (2) color copy, (3) color transparencies, (4) color prints, and (5) line art in color, all to be assembled, inserted, double printed, or otherwise superimposed and combined into background copy for single illustrations. Having artists assemble these various elements into completed illustrations is much cheaper than leaving it for the engraver to perform this work. Some of the operations originally requested seemed mechanically impractical; all of them were very expensive and also constituted a hazard as to the acceptability of the finished product. Our method of processing also removed the danger of misunderstandings with the engraver and furnished him a complete picture of exactly what was expected.

The successful bidder for this job suggested that the pages be shortened by one-quarter inch (from 10½ by 8½ inches to 10½ by 8¼ inches), which would permit binding 2-up by his bindery, at a saving of \$3,000 to the Government. The War Department readily accepted this change, and the specifications were so amended.

To assure fairness to any interested firm, the War Department made available the names of companies who had submitted bids to the advertising agency, and they were invited by this Office to bid.

Minute-Man poster.—This billboard poster for the Bonds Division of the Treasury Department required a four-color-process reproduction of the Minute Man, so located on the art that the four colors would have to be printed on four of the press sheets of the poster.

We suggested to the Department that the Minute Man could be

moved slightly, so that he would fall on two full sheets instead of four. We thus saved eight press plates, eight make-readies, and eight press runs. The savings were as follows:

8 plates, 44 by 64 inches (hand-drawn color separations), at \$50 each	\$400. 00
8 make-readies for color process, at \$30 each	240. 00
8 press runs, 3,400 impressions each, or 27,200 impressions in all, at \$6 per 1,000	163. 20
Total	803. 20

It took an hour or so to make an accurate lay-out for the 24-sheet poster by using the 10- and 12-press-sheet plans for poster production.

This case again illustrates the value of planning by skilled technicians. Otherwise, the opportunity for saving would not have been recognized.

Streetcar advertising cards.—As originally planned by the Treasury Department, this job required four-color-process film separations in three different sizes: 21 by 11, 28 by 11, and 28 by 16 inches. Only 700 cards of the 28- by 16-inch size were needed. We showed the Department that making color separations and special press plates for this size would cost about \$660, or close to a dollar a card, and we suggested that they use instead the 28- by 11-inch image centered on the 28- by 16-inch card. Treasury accepted this proposal, and we were able to produce the 28- by 16-inch cards at practically no cost in the following manner:

The press sheet and the cardboard stock that were available accommodated six 28- by 11-inch cards, two 28's out of the 57-inch dimensions, and three 11's out of the 34-inch dimension. It was practical to impose one 21- by 11-inch and five 28- by 11-inch cards on the sheet, as the quantities requested were roughly in that ratio, and one set of press plates with their make-readies was eliminated. Before running the last 700 sheets, the two outside 28-inch cards were deleted from the press plates, thus leaving the center 28-inch card with ample white margin top and bottom to make the required 16-inch depth.

Stock which would have been wasted in running the combination plate was utilized. Therefore, the only cost involved was the time used in stopping the press to delete the work from the plates, about \$36. The estimated net saving to the Government was \$624.

Pipe-line map.—This Federal Power Commission gas-pipe-line map, size 55 by 43 inches, had to be lithographed in 13 colors. We recommended eliminating the water blue as a separate run by making it a light halftone screen of the drainage blue—the method used by the

Coast and Geodetic Survey in preparing aeronautical charts. This suggestion was not accepted. However, we were successful in persuading the Commission to eliminate a full-color press proof, which would have cost about \$390. Instead of a color proof, we suggested a blue-line print made from each of the eight press-plate negatives. These prints were checked for accuracy against the guides for color separation furnished by the Commission; the other five colors were prepared so that they could be photographed as they were and would not require proofs of any kind. The net savings to the Government follow:

Cost of proofing in 13 colors	\$390
Cost of 8 blue-line prints	32
<hr/>	
Total	358

The Federal Power Commission indicated to us that this map would probably be ordered again within a year and certainly at some later date. They further indicated that the maps would be changed when reprinted, owing to additions of new pipe lines, etc. When the map is revised and reprinted, we will be able to save the Government about \$3,000 in printing cost alone.

We devised a plan to save considerable money both on reprinting and in preparing copy for the reprints. It might be said here that the map lithographer had not heard of such a scheme before and asked us to advise him where the Vinylite sheets essential to the plan could be obtained. We were able to give him several sources.

The plan is explained in this extract from our letter to the Commission:

Upon completion of the production of the map, the contractor is to supply this Office with a black-line photographic print of each color on translucent white Vinylite, made from the press-plate negatives. These dimensionally stable plastic sheets will be receptive to ink, opaque, and light-sensitive emulsions. Thus, they will serve as color-separated master drawings, which at little cost can be brought up to date for printing future editions. As such, they represent a potential saving of \$3,000 in lithographic production costs alone, plus an unknown but certainly substantial sum which would have to be expended by you for the preparation of a complete new set of drawings.

Please request your drafting section to make a record regarding the availability of this material and advise this Office as to whether you wish us to store it or turn it over to you.

Inasmuch as the Vinylite costs about \$5 a sheet, a further economy can be realized by using the other side of the sheet when it is no longer needed for the gas-pipe-line series.

Another poster.—The Labor Department requested 100,000 each of a 4-color-process poster in 2 sizes. We suggested reducing the quantity of the larger poster and increasing the quantity of the smaller one,

in order to work out a combination press sheet containing 3 large and 4 small posters, which would yield a total of 200,000 posters.

The Department accepted our recommendation. By eliminating one set of four-color press plates and their make-readies and reducing the number of impressions by ordering fewer large posters, we saved the Government approximately \$392.

Income-tax withholding receipts.—The Office of Price Administration requisition requested 37,025 five-part sets of continuous snap-out-style forms, with a sewed stub and a detached size of 8 by 3½ inches. Delivery of the job was required within 6 weeks.

As the total quantity was broken down into small lots for overprinting, it was determined that production as a continuous-strip product would result in an unnecessarily high cost. We suggested that the Office of Price Administration accept a slight variation in the detached size to allow a wider field for procurement and also consider the use of snap-outs in strips 4-on to allow flat-bed companies to bid.

Both of these suggestions were accepted, and the job was put out on bid allowing either type of construction.

Bids were received for both types of forms, but the lowest bidder for the continuous-strip product took exception to the 6 weeks' delivery schedule, insisting on 10 weeks after return of O. K.'d proofs.

The lowest bids received for the two products were as follows:

Continuous-strip product, per 1,000 sets, at \$23.37.....	\$865. 17
Snap-out-style product, per 1,000 sets, at \$14.91.....	552. 04
<hr/>	
Total saved per 1,000 sets, at \$8.46.....	313. 13

Technical advice to Budget Bureau.—The Division assisted in the standardization and group ordering of Standard Form No. 50, Civil Service Commission, Notification of Personnel Action, used by all agencies.

Credit for saving a large amount in the production of this form belongs to the Bureau of the Budget, which had undertaken to standardize this form and its use. To this end, conferences were held with representatives of a number of large governmental agencies. The Budget Bureau asked us to make available a technical representative to advise the group as to the design of the form, its format, its construction, including the relative utility and cost of various types, etc.

Representatives from War, Navy, Federal Security, Federal Works, Agriculture, Veterans' Administration, General Accounting Office, Civil Service Commission, Government Printing Office, and others attended the conferences.

Plans for standardizing the form were developed, the only variation between agencies being in the number of parts (copies) constituting sets that might be required.

At our suggestion, arrangements were made for grouping orders from many agencies, to take advantage of ordering in large quantities. Two group orders have since been placed, and the benefits which resulted in this fiscal year are reported here:

On the first order, 37 requisitions were combined for a total quantity of 2,233,200 sets of 5-, 6-, 7-, 8-, and 9-part, 8- by 10½-inch, snap-out-style forms, at a total price of \$71,767.43. The prearranged system for printing these forms enabled departments ordering small quantities to benefit by eliminating a base charge of \$62.55 which would have been applicable on each requisition had they been ordered separately and at various times. This method of grouping produced a saving of \$2,251.80 to the Government.

Similarly, Standard Form No. 50 was again ordered. This time 32 requisitions were combined for a total quantity of 805,050 sets of 5-, 6-, 7-, 8-, and 9-part, 8- by 10½-inch, snap-out-style forms, at a total price of \$18,344.29. The following savings were effected by grouping and eliminating a base charge for each requisition:

14 5-part forms, at \$122.36	\$1, 713. 04
10 6-part forms, at \$141.60	1, 416. 00
2 7-part forms, at \$164	328. 00
3 8-part forms, at \$180.32	540. 96
2 9-part forms, at \$199.64	399. 28
<hr/>	
Total	4, 397. 28
Quantity discount	1, 012. 65
<hr/>	
Grand total	5, 409. 93

The savings on the two grouped orders totaled \$7,661.73.

Composition on catalog.—The manuscript of this War Department catalog consisted of 335 pages of tabular matter plus 240 pages of index, in which a column was to be left blank for page references to be supplied when the body of the catalog would be made up into pages. If the copy for the index were sent to the printer and set in type, the page references would have to be marked on the type proofs and their insertion at a later date would be charged as author's alterations on a time basis. We withheld the manuscript for the index from the printer and submitted it to the War Department with the page proof of the text matter. The page references were then inserted on the original manuscript and run as original type composition at no extra cost. The monetary saving effected by handling the production in this

manner is \$998.40. This saving will be repeated on subsequent similar orders.

Specifications changed.—The requisition as received from the War Department called for printing by letterpress on coated paper. As there were 452 illustrations, approximately half of which were intricate and expensive combination silhouette halftones, the Department was requested to change the requisition to production by offset. The difference in cost between photoengravings and offset negatives was \$4,788.28.

All Hands.—Until recently the Navy Department had always insisted that its monthly magazine, *All Hands*, be produced by the letterpress process.

Several months ago the Department advised us that a contemplated curtailment of printing funds would endanger the continuation of *All Hands* as an official Navy personnel publication during the next fiscal year.

We offered a number of suggestions for revision of format, which would have materially reduced the cost of the publication. The Department was reluctant to accept any radical changes. We pointed out that, because of the large number of engravings in each issue, consideration should be given to printing by offset. An investigation showed that a satisfactory offset publication could be produced at a saving of approximately \$2,500 an issue. The Department finally agreed to offset production and to a change in trim size to permit the use of a standard-size paper stock. These changes are expected to save the Government \$30,000 a year.

WAR ASSETS PRINTING

Just before the beginning of this fiscal year, the War Assets Administration representatives concerned with printing asked that we take over, so far as practicable, the contracting for that portion of their printing which is procured from commercial firms, particularly catalogs, special listings, and the forms which are not standardized. Copy originates in their regional offices and is ordered for delivery on very short schedules, usually 3 to 10 days.

Competitive bids taken by their personnel in the field were approximately twice as high as Government Printing Office charges. Managers of our field offices, transferred to the Government Printing Office on July 1, 1946, had no better success when they undertook the procurement of the work. Neither group had experience in printing procurement.

We proposed to set up our standard-rate-contract plan of operation. Under this plan the rates that shall be paid for work are predetermined. For instance, a stipulated allowance for offset negatives, plates, press make-ready, press running, binding, etc., according to size, is established, and the printer agrees that, for any work which he accepts, he will receive payment according to these established prices.

Since it is not known in advance what will be offered, when it will be offered, nor on what schedule, the contractor is permitted the privilege of refusing any job on which he cannot meet the schedule.

Once these contracts are established and a formal order is placed, the War Assets field representative merely calls the firm by telephone and gives the necessary information relative to the job they wish to place, such as the number of copies and pages and the schedule for delivery. When one of the printers indicates his willingness to accept the job, the War Assets representative fills out a memorandum order and supplemental specifications form, sending the original memorandum order to the printer with the manuscript for the job and mailing copies of the order to us and to the War Assets Administration office in Washington. We sell paper to War Assets, which they furnish to the printer, in accordance with paper-spoilage allowances developed by us and included in the contracts. The War Assets Administration accounts for the paper.

We audit the contractor's billings and assist War Assets personnel and the contractors in the various areas in interpreting the contracts, procedures, and operations as problems arise. We check constantly to prevent misunderstandings, irregularities, misapplication of the contracts, etc.

Recently, difficulty developed in Kansas City. Four bidders were sharing all the contract printing placed by our field office at progressively increasing rates. The War Assets Administration asked the Office to investigate. Representatives of this Office and War Assets went to Kansas City and found printers who would accept the work under standard-rate contracts.

Furthermore, we found that our plant in Kansas City could do practically all the War Assets work there, provided jobs were given to it daily instead of in groups, usually at the end of the week. The new scheduling was arranged by the War Assets representative, and since that date few orders have been given to commercial printers, although adequate sources were available.

Examination revealed the following basic reasons for the high bid prices in that city:

1. Offering great masses of work for production over week ends—26 jobs were awarded to 3 firms on a single day, January 2.

2. Inadequate specifications.
3. Firms being invited to bid had been restricted to four, none of these being the larger firms of the city.
4. Contractors were required to furnish paper, an extremely scarce commodity.
5. Personnel who issued the bids and made the awards could not properly appraise the value of a printed job, or were making appraisals on the basis of letter-shop prices.

From November 15, 1946, through January 2, 1947, 63 jobs had been awarded to commercial firms. Figures compiled by War Assets show that \$10,592.53 had been paid to commercial bidders for catalogs which were priced at \$4,476.56 under our standard-rate contract. All these jobs except one went to three firms. We selected 16 of them, some for each contractor, varying in number of pages and dates, for analysis and comparison, which revealed that prices paid had exceeded our standard-rate contract prices by an average of 134 percent.

Unsatisfactory conditions seemed to exist in several other cities where field-office managers were taking bids from commercial sources. After investigations and discussions, our Planning Manager decided that the situation warranted the sending of representatives to some of these cities to secure qualified signers to standard-rate contracts. Consequently Los Angeles, San Francisco, Portland, Seattle, and Cleveland were visited by Office and War Assets representatives.

The greatest difficulties were encountered in Los Angeles, where prices being paid to bidders were higher than those found in any other city. We approached 20 leading firms. Most of the firms refused our standard-rate contract, some flatly; only four signed. We now have additional firms signed. Here are some comparative figures for Los Angeles showing that \$3,450 over our standard rates was paid for four typical jobs:

<i>GPO standard rates</i>	<i>Commercial low bidder</i>
\$993	\$2, 560
96	215
516	1, 490
501	1, 291
<hr/> 2, 106	<hr/> 5, 556

In Cleveland, War Assets work under bid had been awarded at unreasonably high prices. Sufficient sources were obtained there to take the work at standard rates. According to War Assets, approximately \$30,000 in printing was being purchased monthly by bid in Cleveland. At this rate, about \$150,000 per year would be saved in that city alone through standard-rate operation. We found that in 1 month, February 1946, \$76,000 worth of work had been handled.

Comparisons and general conditions relative to prices being paid under competitive bidding followed the same general pattern in all cities where War Assets work has been bid.

Figures supplied by our Accounts Division indicate that the amount of work shown below was purchased under our standard-rate-contract program for War Assets in the fiscal year 1947:

Paid to contractors for printing and binding.....	\$1, 029, 000
Value of paper furnished and used.....	600, 000
<hr/>	
Total cost.....	1, 629, 000

Since the prices obtained by bidding each job individually were averaging at least 100 percent over standard-rate-contract prices, it is estimated that our handling of War Assets work under this program resulted in the saving of at least \$1,400,000.

In the various cities where War Assets was operating, 640 printers were asked to accept our standard-rate contracts. Of these, 289 refused to sign, claiming the rates were so low that they could not even recover their actual costs under the rates offered. Some frankly stated: "We do not see why we should accept these rates when we can get the jobs by bidding at prices twice those you are offering." The firms which now accept the work in volume believe that higher prices are justified. When told that the rates cannot be increased, they say that they will make out somehow and will continue to accept work.

We are now meeting War Assets needs, and its officials responsible for these printing programs have repeatedly expressed appreciation and satisfaction with the commercial procurement program supervised by our Division of Commercial Planning.

SPECIALTY FORMS

In the fiscal year just past the Government Printing Office discontinued the issuance of waivers for snap-out and certain other specialty forms, with the exception of continuous forms which are marginally punched for use on IBM or Remington Rand mechanical accounting machines over special feeding devices.

Our processing of snap-out orders in the fiscal year resulted in the Government's paying at least \$500,000 less than would have been paid for this class of work had it been purchased separately by the many departments, bureaus, and agencies.

The total cost of specialty forms was \$3,536,917.10 on the 974 orders handled by us. These figures are about 35 percent lower than we had expected them to be.

A further reduction in the orders for these forms is expected. The

War Assets Administration has placed large orders, and it should not use so many in the year ahead. On the other hand, this reduced volume may not materialize, since there is information that many agencies, in order to control their own procurement, placed large orders in the fiscal year 1946 prior to this Office's entry into procurement of this class of work.

Old method of procurement.—When the Office policy of issuing waivers on carbon-interleaved snap-out forms was started, the dollar volume for all Government agencies was probably less than \$100,000 annually. This volume skyrocketed to several millions of dollars before the war and increased greatly during that emergency.

Because so many agencies were making separate contracts for this work and at a wide difference in prices and because the dollar volume had increased until this work has become an important item of Government printing, it appeared to be in the best interests of the Government to establish one contractual authority and one policy for the Government. Representatives of the Bureau of the Budget, as a result of meetings with us, concurred in our proposal to undertake the procurement of such specialty items.

The negotiation of contracts by the many agencies afforded the firms interested in the work multiple opportunities to quote for that portion of work which they desired from the Government. If one firm quoted an extremely high price to the War Department, for example, and a competitor quoted a little lower, then the competitor would get the work, but the higher bidder might later obtain work from any number of other agencies at prices very favorable to him. This did not encourage a healthy basis of competition. Comparisons of actual quotations by the largest specialty-form printing concern revealed tremendous differences in prices quoted to various agencies.

Basis of contract awards.—After a great deal of research, we developed a plan and specifications for bidding snap-out forms which would result in a multiple-award contract. We specifically invited both large and small firms to bid—more than 100 of them. We received 21 bids that were in conformity with specifications, and “multiple awards” were made to all. The specifications allowed quotations on any or all items, with various kinds of construction that are in use. The contract provided, and still provides, for the forms in more common use. In the interest of simplicity and to insure that the greatest possible number of firms would bid, unusual operations and features were not included in the contract. When a job does not fit under the contract and changes cannot be made which would make it fit, the job is bid individually.

When a requisition for snap-out forms is received by this Division, the operations and units are set down and the prices of the 21 bidders are examined. The acceptability of the bidders for each particular job is determined in the order of lowest bidder, next lowest, etc., in sequence through the 21 bidders.

The job is then offered to the firm with the lowest bid price. If, at that time, the low bidder cannot accept the job for delivery on the required schedule, he is required to give us a statement in writing as to the date he could make delivery. If the requisitioning agency cannot accept the proposed date, the job is offered to the second lowest bidder, and on through the list until it is placed.

Performance bonds are required of all firms which are successful bidders. The right is reserved, and frequently exercised, to place combination orders for similar forms, thereby greatly reducing preliminary charges. The right is also reserved to place orders with different contractors for any portion of the total quantity of a job whenever such action is considered to be in the best interests of the Government. This frequently permits payment of a premium for quick delivery on an urgently needed part of a job, while the greater portion of it is produced on a longer schedule by a lower bidder.

Liquidated damages of \$5 a day may be assessed against a contractor who is in default of the shipping schedule agreed to at the time the order is placed. A signed copy of the waybill or similar evidence is accepted as proof of shipment.

In the event that an order is placed with other than the lowest bidder because of the shipping-date requirement and delivery is not accomplished within the specified time, the contractor is penalized by an amount computed as stipulated in the contract, plus liquidated damages already mentioned.

Discount allowances are provided in the contract for all reprints or reorders from the same contractor. Quantity and payment discounts are also provided in the contract, as are other features advantageous to the Government.

Many commercial firms have praised our contract with such comment as: "This contract is the best one that we have seen, from the Government's standpoint."

All papers, abstracts of bids, etc., in connection with each of these orders are sent both to our own auditors and to the General Accounting Office.

Agency cooperation essential.—When a premium price is about to be paid for a job, we ask the agency concerned to extend the delivery schedule or take partial shipments, with the remainder of the job to be

delivered later. We also frequently request the agency to make alterations in the size, construction, or other details of a job.

The response has been satisfactory and is constantly improving, because agencies realize that such requests are based on a desire to save the Government money.

The Office has circularized the agencies who order snap-out forms, asking them to anticipate their needs, allow longer schedules for delivery, and consider carefully such changes as are proposed to them from time to time.

Other benefits.—Besides the savings effected by the methods described, keen competition has developed between the various firms. Commercial companies not now on contract are “sharpening their pencils” to quote lower prices in order to get part of the work. In this class of procurement, we now seem to be passing from a seller’s to a buyer’s market. Fair and equalized charges to all agencies have also resulted from purchasing through one source. Bidders realize that in order to have work offered to them under this contract, they must quote their lowest price.

With procurement of these forms centralized, there is undoubtedly also a saving in the amount of effort and expense incurred in their procurement.

Commercial procurement allows the Government to take advantage of the specialized and varied equipment in many commercial plants. Firms with large and expensive equipment take the bigger jobs, while plants equipped for smaller jobs can produce this class of work more cheaply.

The jobs and the equipment best suited to produce them vary greatly. We may select certain jobs that the Office can handle in its own plant on converted equipment or on equipment that may be purchased. However, the expenditure of millions of dollars for equipment and buildings would be required to process the full range of work. This would not be practical nor economical, particularly in view of the fact that the volume of work fluctuates greatly. Less than half the work ordered is without special features of construction.

While the Office is the world’s largest printing establishment, the satisfactory execution of the snap-out kind of work would have to be segregated into a specialized production unit which would be small as compared with the facilities available in the larger specialty-form plants. A great variety of roll stock and carbon would have to be stored to meet various requirements. Some kinds of paper are requested only on rare occasions, and many of these jobs have special numbering problems.

DATED PERIODICALS

During the year the Division of Commercial Planning handled 64 dated periodicals and similar recurring jobs. They include 29 monthlies and 6 weeklies, the others ranging from dailies to annuals. In size, these periodicals range from 4 to 500 pages. The largest from the standpoint of quantity is the 12-page Naval Reservist, which calls for 1,000,000 copies monthly. The 100-page Navy Radio Production requires only 200 copies.

The number of publications in this class of work dropped nearly one-third, either because of the discontinuance of publications or by reason of their being returned to our own plant. Our records indicate that 497,220,034 printed pages were produced at a cost, including all paper that we furnished, of \$1,320,901.

INCOME-TAX FORMS

Income-tax-form printing is an annual job of such a size that both plant and commercial facilities have to be utilized. Office production in 1946 amounted to 243,116,975 forms, which required 2,226,668 pounds of paper, with a total cost of \$424,385.39.

The commercial procurement, from 73 firms, of 16 jobs, representing 410,975,350 forms, was certified at \$683,702.13. The cost of paper furnished by us to the contractors was \$416,849.10, making the total cost \$1,100,551.23.

For this work 2,860,592 pounds of paper were supplied to contractors in sheets and 1,860,100 pounds in rolls, 4,720,692 pounds in all. Newsprint paper for instruction sheets was furnished by the contractors who printed these forms on rotary presses of the newspaper type.

The work was placed in accordance with plans developed in previous years. Because of the size of the program, it was carefully supervised and all certifications were thoroughly reviewed before they were forwarded.

POSTER AND COLOR PRINTING

Color work employing special or less frequently used processes, such as photogelatin, silk screen, sheet-fed gravure, map printing in color, and decalcomanias, is routed to the Poster Unit of this Division.

The nature of this work is such that the application of intelligent planning techniques results in great savings. Hardly a job is handled on which costs are not reduced because of the special knowledge and information that has been assembled and applied.

TABULATING-CARD PROCUREMENT

The Division processed 2,815 orders for 1,746,638,000 tabulating cards, at a total charge of \$1,200,000. Several years ago, in order to control the price of tabulating cards, the Office installed equipment and undertook production. By this action it forced down the commercial price paid by the Government from \$1.10 to 65 cents a thousand, the price paid during the year under report. We paid this price for most of the cards ordered—those printed on standard-weight manila paper. The mentioned price reduction was obtained gradually. Having accomplished its purpose, use of the equipment was discontinued. The item is a specialty that does not fit into the work of a general printing plant.

Quotations for the fiscal year 1948 have gone up to 90 cents, or an increase of almost 38½ percent.

PROGRAM PRINTING

“Program printing,” as the term is used in this Office, applies to regularly repetitive classes of work for which continuous sources of supply have been established under standard-rate contracts. Department program orders, similar but by no means identical, are received from the same groups in the ordering agency, are completely processed by one unit in this Division, and are produced according to standard predetermined specifications by one or more contracts set up specifically for the purpose.

An open, or master, requisition covers subprint orders, usually on a monthly basis. The program often provides that the agency send copy and print order direct to our contractor. We receive a duplicate of the print order, which enables us to control the specifications, the selection of contractors, the schedules, and the price to be paid.

Some of the programs handled during the year and the amount of printing involved are as follows:

Program	Number of orders	Number of copies	Number of leaves ¹
War Department accelerated pamphlets.....	7, 046	42, 365, 172	161, 278, 198
Navy Department technical-data manuals.....	229	392, 299	5, 604, 726
War Department ASF catalog and pamphlets.....	217	4, 043, 890	69, 915, 812
War Department manuals.....	172	1, 526, 170	73, 885, 584
War Department guide specifications.....	61	152, 500	1, 412, 500
Veterans' Administration manuals.....	13	351, 050	10, 639, 000
Army-Navy specifications.....	535	3, 287, 573	15, 538, 431
Navy Department technical notes and orders.....	117	2, 144, 350	4, 995, 750
Commerce Department Reference Service pamphlets.....	577	1, 805, 653	4, 964, 440
Veterans' Administration mortgage notes.....	93	3, 320, 000	10, 065, 000
Total.....	9, 060	59, 388, 657	358, 299, 441

¹ Printed face and back.

Other less extensive programs, for which statistics are not given, include the War Department engineers' manuals and guide specifications; Air Forces pilot handbooks; Army-Navy aero drawings; the War Department lubrication orders; and form programs for the War Department, Federal Public Housing Administration, the Veterans' Administration, and for the various emergency agencies. The largest of the current programs is the War Assets Administration catalog printing, which is discussed at length elsewhere in this report. (See p. 130.)

TESTIMONIAL

The conscientious, painstaking, and competent work of the Commercial Planning Division, with the cooperation of our Accounting and Purchasing Divisions, led the New York Employing Printers Association to present the following testimonial to the Public Printer:

Whereas the demand for printing necessary to the prosecution of the war requires the use of the facilities of the Government Printing Office and those of the commercial printing industry, all of which have been most efficiently coordinated under the direction of the Public Printer; and

Whereas, in his solution of the problem of employing the equipment and services of the commercial printing industry in conjunction with those of the Government Printing Office, thus synchronizing the productive capacity of the Nation, he has established a system of impartial treatment to all; and

Whereas, while he is not unmindful of the dignity of his high office and its major responsibilities, he has retained with cordial friendliness "the common touch" and a personal pride in having been a competent and respected member of the rank and file of craftsmen: Therefore be it

Resolved, That the graphic-arts industry of Greater New York and vicinity, as represented by more than 1,000 persons assembled February 16, 1943, in the Hotel Biltmore, New York, extends cordial greetings to the Honorable Augustus E. Giegengack, Public Printer of the United States, and records its gratitude for his distinguished service to the industry and for the substantial contribution he is making to the national war effort through the efficient use of the skilled personnel and the modern equipment of the graphic arts, both in the Government Printing Office at Washington and in the commercial plants of the Nation.

In accepting the testimonial, the Public Printer closed his acknowledgment with the observation:

I regard my name on this testimonial as incidental. I am proud to receive this beautiful scroll in the name of the Government Printing Office employees, who have toiled long, diligently, and faithfully, often beyond the normal requirements of their positions, to make possible whatever we have accomplished. Their share in this honor is greater than mine.

WHY A DIVISION OF COMMERCIAL PLANNING

The Public Printer established this Division to save money. It permits the Government to benefit by economies that can be effected

through production in the Government Printing Office, commercial sources, or a combination of the two, whichever is more advantageous.

As defense plans were developed just prior to the war, the purchase of a small volume of work was initiated to relieve the Office plant which was struggling to meet the demands for more printing on controlled and faster schedules. Then the Treasury Department began an intensive campaign to promote sales of the new Defense Savings bonds and stamps. Since the Department officials felt that their handling of the Baby Bond sales campaigns of previous years had not been economical and to the advantage of the Government, it asked the Public Printer to take over the printing of this new and larger program. The work consisted principally of large runs of sales folders which could be fitted best into production facilities in specialized commercial plants; large runs of full-color posters, and other full-color jobs which the Government Printing Office was not equipped to produce economically. Consequently, commercial purchases expanded.

Then the war came. Departments requested appropriations to establish large printing plants. The Public Printer recommended against many of these requests, and they were denied by Congress.

He believed that huge expenditures for new equipment and plants were unnecessary and that the increased printing needs of the Government attributable to the war could be obtained from equipment available and idle in commercial establishments.

By obtaining from existing commercial plants the additional services and production needed, certain advantages would accrue:

1. Expenditures by the Government for equipment and buildings would be unnecessary.

2. Production and services were needed immediately. Commercial plants were already in existence and had a large percentage of idle time, owing to the curtailment of advertising and other printing.

3. Months, perhaps years, would be required to establish the new Government plants, or to enlarge existing ones.

4. Purchase of needed surplus printing and binding from commercial plants would prevent the diversion of vitally needed manpower, machine-tool time, and use of critically needed materials, such as steel, aluminum, copper, and a nearly endless list of necessary auxiliary equipment, essential to the building and operation of a new plant.

5. During the early days of the war, commercial plants throughout the country were ready, willing, and anxious to produce the work at fair prices, in order to contribute to the war effort and to maintain their establishments.

In order to purchase the work efficiently, it was necessary to provide exact specifications, accurate estimates of the commercial value of the

work, close scrutiny and appraisal of bids received, and means for insuring delivery on schedule in accordance with contract requirements. All this, of course, had to be based on a complete understanding of production methods.

To insure economical handling, it is essential that printing be planned by technicians who have an understanding of the various processes and methods of production, of what is practical and possible, and how each job or operation can be most cheaply produced and obtained. It is also necessary to determine which firms can do the work most economically, and to see that they are invited to bid.

By no means the least contribution of experienced and trained technicians is their ability to suggest to the ordering agencies changes which will afford less costly production in accordance with schedule requirements. Our experience has thoroughly demonstrated that the specialized knowledge of the group of technicians assembled in this Division permits definite constructive job planning by them, which results in less expense to the Government than would be possible under any other method.

In addition, our procurement affords the savings resulting from the composite expert technical knowledge of the whole Office. This Division frequently seeks, receives, and profits from the knowledge, experience, and skill to be found in our production divisions, the three other planning divisions, and in the Division of Tests and Technical Control.

The cost accountants and computers in our Accounting Division carefully review this Division's work as well as the contractor's billings, and frequently contribute helpful suggestions. Auditing by personnel with specialized training saves the Government large sums of money. The commercial-printing industry has been slower in adopting engineering methods of planning than most major industries, partly because of the belief that every job is tailor-made and has its own individual problem. The premise that each job has problems peculiar to it alone is correct, but proper planning can be applied to these problems to tremendous advantage. Many commercial-printing firms have studied our operations and adapted them to their own needs. At least one large firm is known to be setting up a division almost identical with ours for the purchase of printing which it is not equipped to do or which is surplus to its facilities.

WHY SEPARATE COMMERCIAL AND PLANT PLANNING DIVISIONS

The problems that are presented, the techniques of handling, and the methods of drawing specifications which become parts of contracts,

etc., differ so greatly that plant operation and commercial procurement cannot be advantageously combined. Both phases are so large that each requires a sizable organization and specialized handling. Information and personnel are freely exchanged between the two so that no advantage is lost. Combination of the two would result in no fewer employees.

When it is considered that our Commercial Planning Division processed \$12,906,982.98 worth of work in this fiscal year, it should be at once apparent that a specialized organization is required if the work is to be handled efficiently and economically.

WHY CONTINUE COMMERCIAL PLANNING DIVISION

The Commercial Planning Division operates in many fields in which the Government Printing Office plant either does not operate at all or operates in a very limited way. Examples are color-process engraving, printing, and lithographing, snap-out, continuous, fanfold, spirit-duplicator, and salesbook production, and other specialty forms and combinations of these; photogelatin process work; rotogravure and sheet-fed gravure; silk-screen printing; decalcomanias and transparencies; roll labels; mounting and die-cutting; billboard posters; intricate map production; tabulating-machine cards; printing of newspapers or work adapted to newspaper presses; production of magazines on rotary high-speed specialized equipment; and composition in Chinese and similar foreign languages.

COMMERCIAL PLANNING DIVISION AS STABILIZER FOR GPO PLANT

On several occasions during the year, when plant work loads dropped below expectations, the Division has returned to the plant large quantities of work that had been scheduled for outside production. It also furnished the planning personnel to get the work through the Plant Planning Division more quickly. Likewise on several occasions, when our plant was overloaded with work, the Division has acted as a safety valve by relieving it of large volumes of printing.

Many times during the year our bindery has had equipment open for work that the plant could not print. Printed flat sheets were delivered from our contractors to fill the gap. Likewise, we have bought composition and plates or negatives to allow production of the remainder of the printing and binding in our plant when Office facilities might otherwise have been partly idle. Adjustment of the volume of work through commercial procurement reduces plant costs by leveling production loads.

DIVISION OF TYPOGRAPHY AND DESIGN

This Division is charged with responsibility for the format, design, art work, type faces, materials, and binding style of all publications. It prepares and retouches photoengraving copy, orders photoengravings, passes on acceptability of all new publication copy, prepares offset copy for reproduction, and operates the Photographic Section. This work is accomplished in collaboration with the production and the other planning divisions and through consultation with the ordering agencies.

Functioning in a field which was relatively new to the Office when the emergency period began, it has not had the time, the facilities, or the personnel to modernize and improve all long-established Government publications. But every year more of them are receiving typographical treatment. The original purpose in establishing a Lay-out Section was to develop and expand it solely as a typographical-design group large enough to take care of all publications that needed typographical direction.

The war made it necessary to compromise with objectives, procedures, and organization plans. First of all, the personnel, so laboriously trained or recruited, began to drift to better-paying jobs either in the Government or in industry. The military service took a few more. These losses were partly compensated by the establishment of design groups in some of the ordering agencies. Nevertheless, the present staff of typographers is and has been inadequate for several years. Again, production problems, particularly the huge expansion in the volume of offset lithography, threw new and unanticipated duties on the Division. It became necessary to employ a small group of artists for casual art work, as ordering agencies went into color printing on a scale unprecedented in the Government. We were given responsibility for acceptability of art work and the necessity for the use of color. Copy for commercially procured publications came to us for preparation. The following indicates the nature and extent of the work performed:

Jobs processed by the Division during the fiscal year totaled 15,280, including 7,366 orders on which copy was prepared for commercial contractors who produce regulations, orders, and forms required by emergency agencies. The figures given include 5,730 jobs handled by our Photographic Section and all publications on which actual operations were performed, but do not include those jobs on which we merely gave advice and guidance to departments and other divisions of the Office. They do not include jobs reviewed before, after, and during printing for approval of quality. Chargeable operations performed within the Division amounted to \$111,897.65.

At the end of the fiscal year there were 46 employees on the rolls, exclusive of 3 on detail from the Composing Division. The personnel chart shows the sections and number of employees in each by title. (See chart VI.)

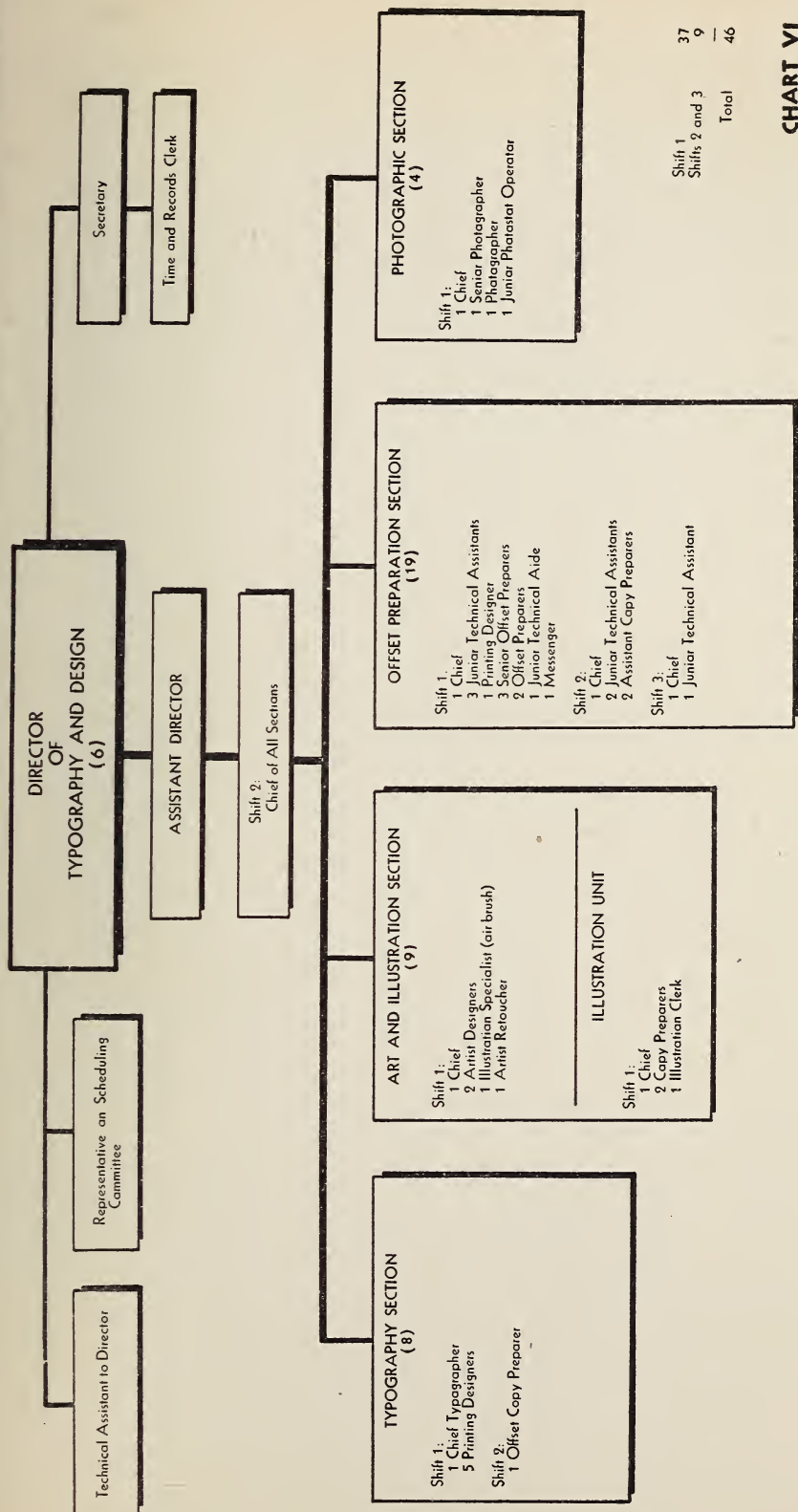
In modern manufacturing practice, production and design go hand in hand. This applies to printing as well as to other products, and Government printing should be no exception. The only difference between the output of the Government Printing Office and that of commercial printers is that most Government printing does not have to do a selling job. Certain branches of the Government try very hard to sell their ideas and services so the Nation as a whole will benefit. Examples of this kind of printing are the publications of the Victory Bond Division of the Treasury Department; of the Recruiting Divisions of the Army and Navy, since military service by conscription is no longer required; of the Public Health Service, printing programs for the control of disease or the improvement of the health of the Nation; of the Department of Agriculture's campaigns for forest-fire prevention and soil conservation; or any other literature aimed at conservation of our natural resources.

The Division of Typography and Design assists in all phases of planning operations that fall outside of jacket writing and estimating. It is engaged in three important production operations which are not actually a part of design but which can be done better under the supervision of persons who have training and experience in design problems. They are: (1) Preparation of offset copy and the ordering of all negatives for offset printing; (2) retouching and correcting of photographs and line copy; and (3) sizing and ordering of all photoengraving for letterpress printing, as well as the associated operation of indicating on the copy where the illustrations are to appear. Design is applied to these operations in a practical manner. In many instances lower cost results from use of good design principles to eliminate or to replan poorly organized copy.

We have been instrumental in improving the physical appearance of Government printing to the extent that it is comparable to that produced commercially.

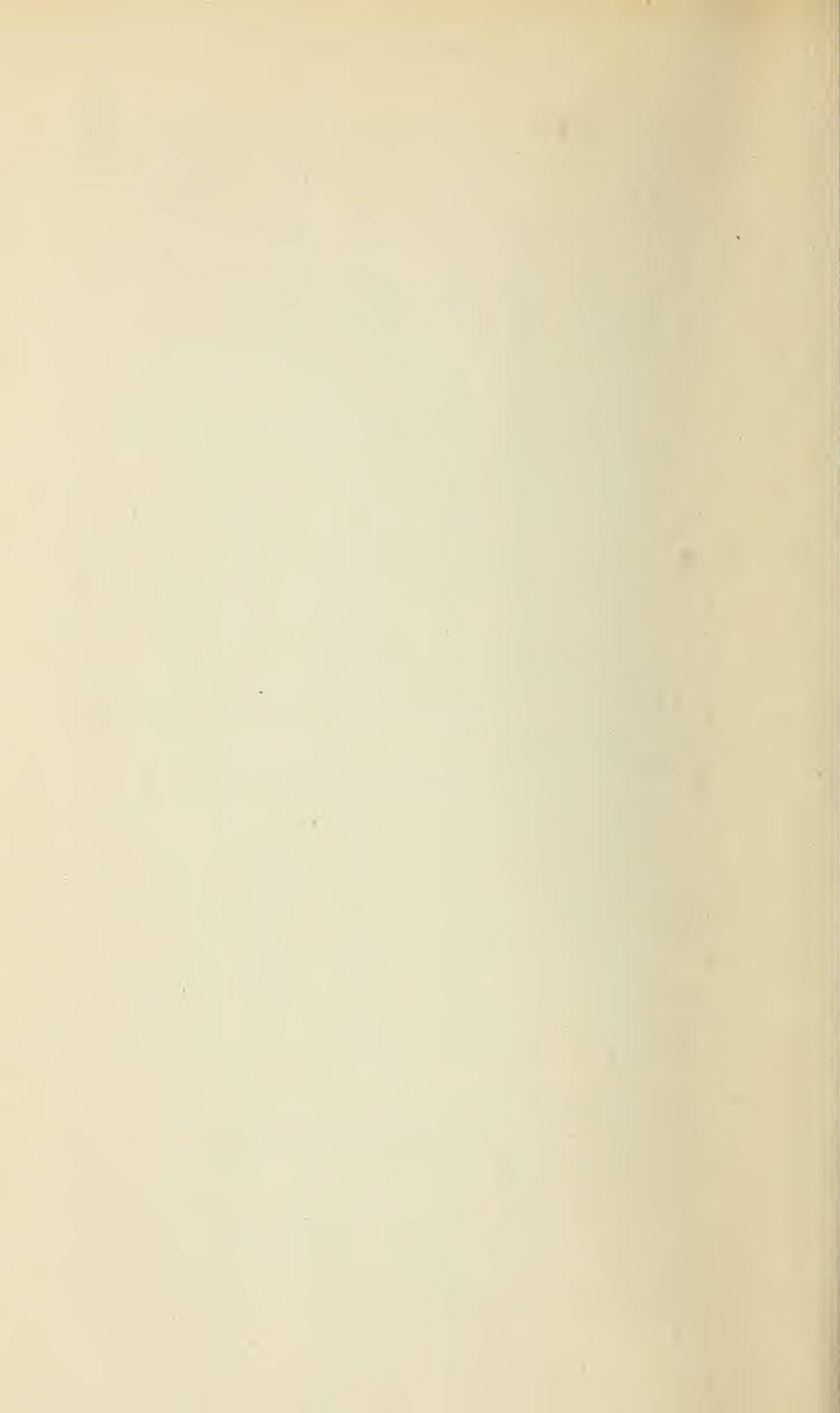
Improvements in the opacity and color of paper stock, the standardization of colors for cover papers in cooperation with the Division of Tests and Technical Control, and better standards in other materials and methods of production have been effected through cooperative efforts with several other divisions.

We originated the Letterpress and Offset Printing Standards and completed them in collaboration with the other planning divisions, making it possible for the Government Printing Office to show ordering



Shift 1 37
Shifts 2 and 3 9
Total 46

CHART VI



agencies how uniform pamphlets and booklets can be produced from standard sheet sizes of paper.

We were responsible for establishing the typographic standardization of War Department training manuals for World War II at a time when the production burden was being intensified by many requests for unusual display effects. We presented to the Adjutant General's Office recommendations for typography and format standardization which were adopted and used throughout the entire war. To make the operation of this plan more practicable, a booklet entitled "Style Pages" was printed and distributed as a guide in this work.

Our typographers have striven toward developing economies of manufacture through careful design planning by the elimination of mixed type faces to avoid needless assembly operations in the Composing Division. Many hours of production have been saved by this procedure.

Responsibility for determining the necessity for the use of color in Government printing is vested in this Division. Color merely for the sake of ornamentation is not permitted. The end use of the publication or its functional requirements determines when the no-color restriction is to be applied.

Many Division operations for which time is not charged are of direct benefit to the Office and to the departments because of the preparation of specifications that fit into the production requirements, thereby speeding up manufacturing processes and providing a greater return for the expenditure of Federal funds.

How do design improvements reduce cost or actually benefit the Government? This can be answered best by examples.

One of the most outstanding is the redesigned format of the Congressional Record. The estimated saving for 1 year, through the change from 7½-point on a 9-point body, 2 columns to the page, to 7½-point on an 8½-point body, 3 columns, was \$123,750. The comparative tabular analysis submitted by the Public Printer to the Joint Committee on Printing, at the time he asked that committee's approval of the new format, is reproduced here for greater completeness of this presentation. It is as follows:

Item	Old format	New format
Composition.....	\$302, 873. 00	\$249, 475. 45
Imposition and make-up.....	27, 950. 00	23, 206. 89
Platemaking.....	59, 626. 00	49, 600. 47
Presswork.....	140, 000. 00	117, 242. 00
Binding.....	95, 000. 00	79, 378. 50
Paper stock.....	103, 742. 56	86, 736. 65
Total.....	729, 191. 56	605, 441. 56
Saving.....		123, 750. 00
Percent.....		16. 97

The actual reduction in the cost of the Congressional Record for the first year after redesigning exceeded our estimate considerably. It was \$150,000, as shown by charges for the work. Many Members of Congress may not know that the application of good typography also reduced the cost of speech reprints from the Congressional Record by 45 percent.

Another example is a new design for the forms used by the census enumerators. The Census Bureau of the Commerce Department originally requested three or four colors for these forms, but by design planning we were able to make the forms more effective and print them in one color. Our new design helped in eliminating some of the more than a million errors which normally creep into these records during the enumerating process.

A more recent example of saving by design planning is a publication for the National Gallery of Art. The Gallery wanted 150,000 reprints of a 20-page booklet to be passed out to visitors. The estimated cost of the originally planned booklet was about \$5,000, which was more than their budget permitted. By design planning, it was possible to reduce the publication to 16 pages, thereby cutting the cost about \$1,400 without detracting from the appearance of the printed job.

The Federal Security Agency wanted a silk-screen counter display requiring 13 colors. By preparing new art work, we reduced the number of colors to 6, adding to the effectiveness of the design and reducing the cost by \$1,500.

Our constant objective is to reduce the cost of printing to the Government and to improve its effectiveness by printing it in such a way that its appearance is more inviting and the information it contains can be quickly and more easily understood.

No clearer evidence of the benefits of good typography can be found than in the following memo from our Superintendent of Documents to the Director of Typography and Design:

In closing our books for the fiscal year 1947, we have found that the sales function of this Division has enjoyed the most successful year in its history. For the first time in 52 years this Office will return to the Treasury an amount greater than its entire appropriation, which includes many nonrevenue functions.

We believe that a substantial portion of the credit for the tremendous increase in our sales business in the last 2 years belongs to the Division of Typography and Design. The assistance which you have rendered in modernizing our sales circulars and placing them on a basis comparable to the best commercial practice has been undoubtedly a substantial factor in the increased volume of business. Your assistance in planning and designing sales catalogs covering slow-selling publications has been of material assistance in turning publications into revenue for the Government.

Examination of the work of the Government Printing Office during

the past 12 years will show quite clearly that Government printing has improved. No criticism of the typography and design of Government printing has appeared in the trade magazines since a Director of Typography and Design was appointed to assist in planning operations. One has only to examine the Yearbook of Agriculture for 1935 and compare it with those printed since that time to realize what the Division of Typography and Design has done to improve Government printing.

OFFSET-COPY PREPARATION

Work of the Offset Copy Preparation Section now represents a major part of the Division's operation. In 1935 there were only six presses in the Offset Press Section of our Main Press Division. Since then offset lithography has increased manyfold, owing primarily to the influence of war printing. However, the growth of offset printing was a coming development that could not be held back. In the commercial-printing industry it has grown tremendously, and expansion in this Office has kept pace with it. Prior to the establishment of the position of Director of Typography and Design, preparation of offset copy by the Office and by ordering agencies was haphazard. Offset copy not properly sized and organized was a problem for production men in the commercial field as well as in this Office. It interfered with production, slowed it down, and was largely responsible for the poor reputation offset printing bore until steps were taken to correct the situation.

At the end of the fiscal year we had 19 employees on 3 shifts preparing offset copy for production on 15 large, modern, high-speed presses. Offset copy must be sized, organized, folioed, laid out, and prepared for the camera. In addition, preparation is done for hundreds of jobs that are purchased commercially. The production of 9,397,984 negatives by 26 employees of the offset-negative room of our Platemaking Division in 1947 compared with 2,259,752 negatives by 9 employees in 1939 shows how this work has grown.

Each year the volume of work to be processed in this Section increases. The war gave it an added impetus and it continues to expand. It is clearly evident that the work can be expected to grow and the personnel of this Section to increase in proportion to the demands made by the increased use of offset printing.

During the fiscal year, 4,796 offset jobs were processed. Work prepared for purchase through commercial offset facilities about doubled that of the previous year; work prepared for printing in the Government Printing Office increased slightly more than 10 percent.

With the reduction or elimination of the graphic units previously operated by many departments and agencies, they do not have the

personnel or facilities to prepare copy as well as it should be done, and the burden of organizing and preparing it has fallen on us. One series of publications consisting of approximately 120 jobs, including in all 14,000 pages of manuscript and over 1,000 folded maps and diagrams, showed no continuity of pages, nor any uniformity of sizing of illustrations and drawings. The task of arranging this material for production so that it could be printed without errors and without delay required an unusual amount of work. Had the copy been used without careful preparation and editing, the number of folded inserts on these jobs would probably have been double the actual number printed and would have cost many extra hundreds of dollars to produce. Seventy percent of the pasters were eliminated in some of these jobs. In spite of all the problems involved, the entire series was completely prepared and edited in 26 days.

The largest single job processed by this Section during the fiscal year was the offset printing portion of the Pearl Harbor hearings. There were approximately 6,500 pieces of exhibit material, which had to be carefully coordinated to reduce the number of tip-ins and folders. This material when completed made 5,780 printed pages besides 573 tip-ins or pasters which could not be reduced to page size.

Through a work-simplification proposal, all offset copy now remains in this Section and does not follow the work jacket during estimating and jacket writing. The necessary basic information is put on a work sheet which is used as a guide by the Division of Plant Planning. In addition to preventing damage to the copy, this method of processing simplifies and expedites the estimating procedure.

Additional duties of this Section are specifying of paper negatives for offset printing and indicating which jobs require Ozalid or blue-print proofs for proofreading and revising purposes. The Section's second shift prepares copy for reproduction proofs for combined quantity units in imposition of forms and pamphlets to be produced by four local contractors engaged in overnight offset service. The following table shows the volume of overnight work for the fiscal year 1947:

	<i>Number</i>
Orders received, including jackets.....	7, 366
Total plates.....	4, 940
Daily average plates.....	19
Total sheets (35 by 45).....	20, 722, 995
Daily average sheets.....	81, 266
Total impressions.....	34, 168, 095
Daily average impressions.....	133, 995
Total finished copies.....	241, 109, 175
Daily average copies.....	945, 525
Total pages processed.....	44, 010

Two employees on shift 3 supplement the operations of shift 2 if the work carries over into the early morning hours. They also complete work from shift 1.

TYPOGRAPHY SECTION

This Section now has only four employees doing typography, layout, and design exclusively, the other employees being engaged in the preparation of illustration and manuscript copy, assisting with production details, preparing specifications, and production follow-up.

As part of its normal duties this Section has completed special jobs for the White House, the State Department, and the United States Bureau of the Mint. It also has designed treaties and treaty cases for the State Department.

Present Government printing problems require every possible design and typographic assistance that can be supplied. Printing today, no matter in how simple a form it is prepared, has considerable competition from magazines and daily newspapers. If Government printing is not produced in an interesting, easy-to-read manner, then the millions of dollars spent on research by Agriculture, Labor, and Commerce among others, are wasted. It is not enough merely to compile material into a report. It must be prepared so that the report will provide the facts in a simple, direct, and readable form.

CREATION OF NEW ART WORK LIMITED

In the Art and Illustration Section, only three of the nine employees are employed in creative art work. The others are engaged in sizing illustrations, writing of engraving orders, flagging copy for positioning of illustrations, and retouching photographs and line illustrations.

Two recent jobs, one a map of the Central Valley project for the Interior Department and another for Congress, are typical.

The Interior job was a drawing of a map 6 by 10 feet in size, in four colors. It was impractical to reproduce it from the original submitted. By redrawing it in a manner and in a size suitable for reproduction, it was possible to save more than \$500 in reproduction costs and deliver the job in the very short time necessary to meet the Department's needs.

The House Committee on the District of Columbia requested reproductions of a District of Columbia Organization Chart, 14 by 20 feet in size, which was hanging on the wall of the committee room in the House Office Building. The Photographic Section photographed the original copy on the wall and furnished prints to the Art and Illustration

tion Section for redrawing it so that the chart could be reproduced in a convenient size for binding as part of a House document.

PHOTOGRAPHIC REPRODUCTION

The Photographic Section produced 81,552 pieces of work. A print washer, print dryer, print straightener, print press, and a condenser-style enlarger for line copy were secured from war surplus material. A new Ozalid machine has been in operation since late last year and has been helpful in expediting the reproduction requirements of the Office. It is used to produce additional copies of master specification sheets for the Commercial Planning Division and has cut the cost of reproducing this material by 60 percent while also speeding up the work.

GOOD GOVERNMENT PRINTING

One of the first new positions the Public Printer created after taking office was that of Director of Typography and Design. In 1931, Dr. Carl Rollins, of Yale University Press, writing in *Direct Advertising* (vol. 17, No. 4), described the need in the following words:

The quality of the work put out by the Government Printing Office is always mediocre, it is often poor, and frequently it is downright abominable * * *

It is a truism that the Government should be the ideal employer of labor (as it often is), that it should be the leader and exemplar and inspiration in every line of effort into which it enters. The work of the Bureau of Standards, of the Forestry Service, of the Lighthouse Service, occur as instances where the Government does lead. In many cases Government architecture is admirable. Why should not its printing, which has a more persuasive influence than any other governmental activity, also be superior? Why should the Congressional Record have a title page which is an inarticulate horror? Why should the Government bulletins be made to look cheaper than they are?

How to make the Government printing conform to the high standard existing today in many printing offices is mostly one of willingness to tackle the problem in an intelligent and effective way. There is no excuse whatever for the Government Printing Office to continue to turn out such oceans of sleazy work as it does, nor for it to perpetuate the horrors in "artistic printing" which signalize its recognition of the unusual "job." Good type costs no more than poor type, though sometimes good printing may cost a little more than the ordinary "average job-printing office" variety. But it is more than possible that even a properly economical committee on printing might be impressed if the Government Printing Office should get one of its department reports into the *Fifty Books of the Year*! ¹ Some day * * * a Congressman may arise and suggest that a Director of Typography be employed by the Government Printing Office.

The justification for the Division of Typography and Design, if any were needed, can be found in many letters of commendation from order-

¹ *The Dance of Death*, a Library of Congress publication printed by the Government Printing Office, was selected as one of the *Fifty Books of the Year* in 1947.

ing agencies, of which the following from the Librarian of Congress is just one example:

The Library of Congress has received a heartening response to its new publication, The United States Quarterly Book List. The contribution of the Government Printing Office to the success of this venture is large, and for that reason I want to send along to you some comments which are typical of those coming in:

"Contents and outer appearance of this first number meet fully with the highest expectations."

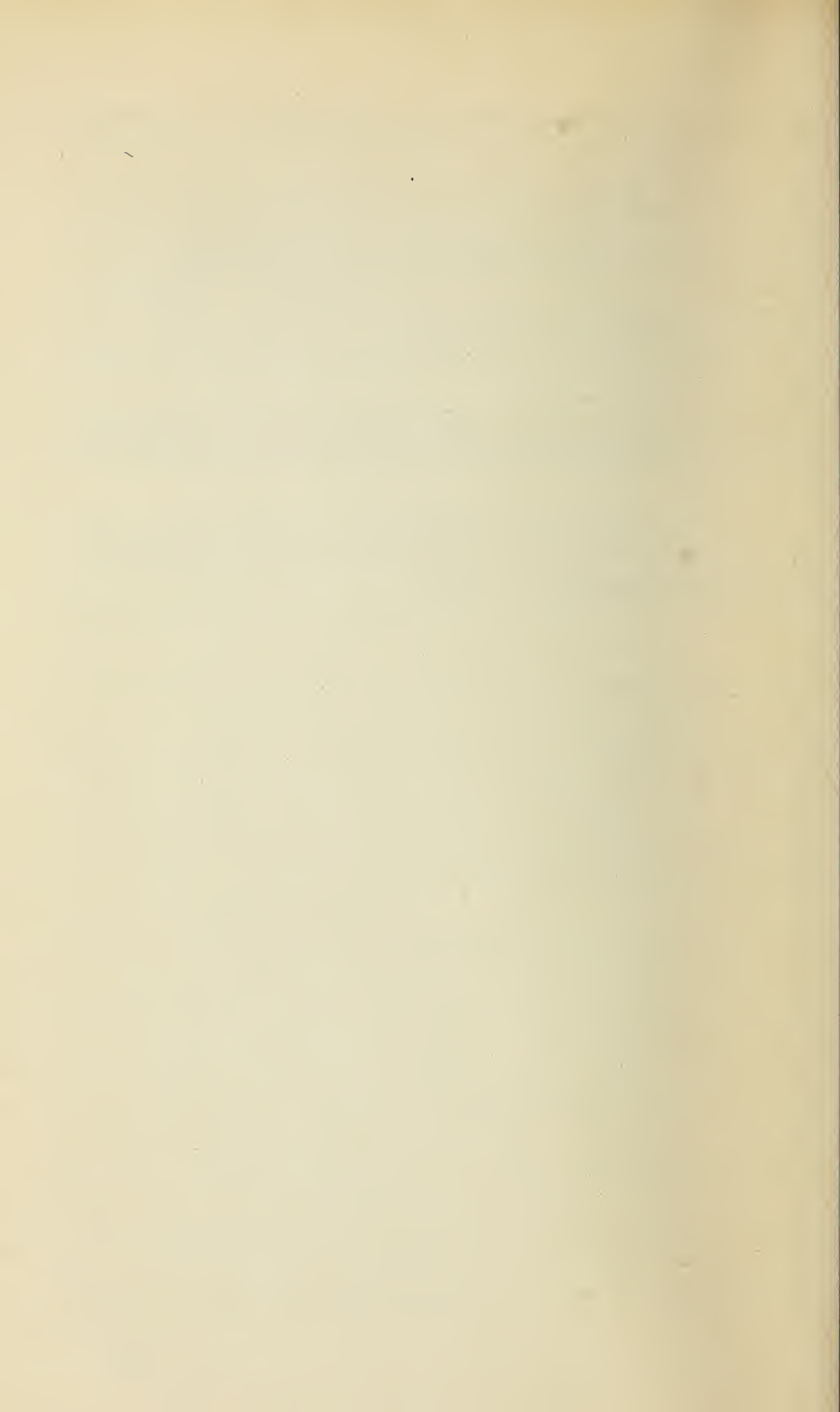
"The typographic style is most satisfying."

"Good proofing throughout, good page color, good impression, good opaque paper * * *."

"Handsome format, clear print."

I should like to add that the Library of Congress is, of course, in complete accord with these opinions. The Government Printing Office has done a splendid job for us, both in the design and in the setting up of the Book List. Our congratulations and our thanks.

While the results of the Division's work are apparent in many publications, its job is not finished. Current and future printing requirements indicate an expansion of its activities.



PART III

Production

AS SHOWN on the Government Printing Office organization chart (facing p. 101), the Production Manager is responsible to the Deputy Public Printer for the administration of all shifts of the Composing, Platemaking, Presswork, and Binding Divisions, the Library of Congress Branch, the Supreme Court Unit, the Delivery Section, and for congressional and departmental details. The 4,612 employees in the production divisions are under the Production Manager's supervision. He or his representative collaborates with the Planning Manager in determining which jobs are to be produced in the Office, procured commercially, or waived for direct procurement by the ordering agency. He furnishes information to the Planning Service Division on the status of every job in production and also supplies information necessary for the establishment of schedules, production plans, and methods. The Director of Typography and Design advises and consults with him on the acceptability of copy and the quality of work in production.

Purchase requests for all printing and binding machinery and equipment are prepared under the Production Manager's direction, with the advice and cooperation of the Planning Manager and the Consultant on Methods and Procedures.

The Night Production Manager, under the Production Manager, is charged with responsibility for the direction of all congressional printing, including the Congressional Record.

The Production Manager is chairman of the Work Simplification Board; is a member of the Employee Evaluation Board, the Executive

Safety Committee, and the Committee on Deferment; and also serves on special boards and committees as required and is the Public Printer's chief consultant on all matters immediately relating to production of public printing and binding.

The Assistant Production Manager is chairman of the Housekeeping Committee, Assistant Security Officer, and chairman of the Safety Subcommittee; he is a member of the Executive Safety Committee and represents the Office on the Interdepartmental Safety Council. He is also charged with the investigation of all lost-time accidents.

CONGRESSIONAL PRINTING

During the two extraordinarily active sessions within the fiscal year 1947, the total printing requirements of the Congress have been extremely heavy. Production figures for the second session of the Seventy-ninth Congress were somewhat below those of the previous year, the Congress having been in recess for 5 months, but work resulting from the first session of the Eightieth Congress has far exceeded any figures previously reported. The numerous changes brought about by the reorganization of Congress and the consequent establishment of new committees appear to be largely responsible for the urgency and increase in printing and binding required.

The daily Congressional Record for the second session of the Seventy-ninth Congress required 155 issues, which totaled 16,452 paper pages, an average of 106 pages per issue. The average for the previous session was 85; for the Eightieth Congress, the daily average was 109. Beginning March 17, 1947, a Daily Digest, averaging 6.7 pages per issue, has been printed as part of the Record. The largest Record printed during this fiscal year was 224 pages, on July 25, 1946. At the time of this writing, a few figures for July 1947 have become available. Although they are beyond the time limits of the fiscal year under report, these figures are nevertheless included here because they round out the statement of Congressional Record requirements for the first session of the Eightieth Congress: In the month of July, the Record averaged 164 pages per issue; on July 24, a 224-page issue was produced; and on July 25 and 26, a 256-page Record was required each day.

The daily Record, like a newspaper, is produced under the stress of a dead line. Before being put in bound form, it is scanned by a small force specially trained for that purpose. Errors, both typographical and factual, are eliminated; speeches and other material are put in proper sequence; corrections and changes requested by Senators and Congressmen are made. A saving of several hundred pages is generally

accomplished through this procedure. Thus the Congressional Record is edited by us to take its place on the shelves of libraries, law offices, and elsewhere as a reliable factual reference source depicting our national life as reflected in the legislative proceedings of Congress.

Bill work from January 1 to June 30 was 25 percent higher than for the same period a year ago. Subcommittee prints of the Interior and Agriculture Departments' appropriation bills made 581 and 460 pages, respectively. House bill 3830 required 336 pages. Three bills, providing for revisions of the United States Code, totaled 1,011 pages.

The size of committee calendars was more affected than any other class of printing by the reorganization of Congress. While the number of legislative calendars has been reduced as a result of committee consolidations, this decrease in number has been more than offset by increases in size. Senate and House Calendars together involved the printing of 34,692 pages, the number of pages in one calendar going as high as 398.

Hearings during the Eightieth Congress increased in size and number, several exceeding 1,000 pages. House and Senate hearings on amending the National Labor Relations Act made six and five parts, respectively, and a total of 6,356 pages.

House and Senate appropriation hearings totaled 37,729 pages, and a number of individual hearings exceeded 3,000 pages.

The following table gives a summary of the principal items of congressional work and shows also the extent to which the volume was concentrated in the last 6 months of the fiscal year:

Class of work	July 1 to Dec. 31, 1946	Jan. 1 to June 30, 1947	Total
Bills:	<i>Number</i>	<i>Number</i>	<i>Number</i>
Senate (introduced):			
Bills.....	114	1, 537	1, 651
Resolutions.....	25	137	162
Joint resolutions.....	21	140	161
Concurrent resolutions.....	8	22	30
House (introduced):			
Bills.....	302	4, 050	4, 352
Resolutions.....	71	264	335
Joint resolutions.....	22	224	246
Concurrent resolutions.....	10	54	64
Total new bills.....	573	6, 428	7, 001
Total bill prints.....	2, 755	12, 583	15, 337
Bill forms to press.....	2, 386	11, 832	14, 218
Bill pages set.....	9, 391	52, 135	61, 526
Bill pages picked up.....	6, 586	23, 771	30, 357
Reports:			
Senate.....	295	405	700
House.....	299	753	1, 052
Documents:			
Senate.....	33	72	105
House.....	90	370	460

Night forces in the production divisions have been established primarily for congressional printing and binding. At the end of the fiscal year, employees on these shifts totaled 1,843, a net loss of 79 during the year. In the second half of the fiscal year, the work forces in the Composing, Presswork, and Bindery Divisions were inadequate for processing of the complete congressional-work load, which regularly overflowed into the day shift. (See also pp. 156-157.)

COMPOSING DIVISION

For the past several years there has been a steady and progressive decrease in the number of employees in the Composing Division through resignations, retirements, and transfers. There was a further drop from 1,648 to 1,595 in the 1947 fiscal year. With this net loss of 53, the Division now has 271 fewer employees than it had 5 years ago. The reduction affects especially the skilled crafts engaged in machine composition and proofreading. Replacements are sorely needed, but they are not available. Fifty additional operators would raise annual type production by nearly half a billion ems; or, to put it another way, they would reduce necessary overtime proportionately.

WORK VOLUME UNPREDICTABLE

We were subjected, particularly during the last 6 months of the year, to pressure that was not matched even during the war. Schedule completion dates had to be met, but scheduled time allowances were continually disrupted by an unpredictable volume of "must" publications.

Our records show 2,007,853,700 ems of type set during the year, in comparison with 2,102,483,400 set during 1946. Composition in the Monotype Section amounted to 783,033,000 ems. These figures do not include unmeasurable pick-up and display material. Monotype Casting produced and issued 2,263,377 pounds of sorts, rules, dashes, and spacing material. Total use of type metal amounted to 8,902,107 pounds. In the Hand Section 195,939 forms were imposed for printing from type or for plating.

The Job Section imposed and locked up for press or plating a total of 179,379 forms and pages, compared with 170,769 in the previous fiscal year. This Section had 157 employees, against 165 in 1946.

CONGRESSIONAL WORK

The weight of congressional printing has fallen hard on this Division, composition being, as a rule, the chief production factor in this

class of work. It cannot be put on schedule, as is the case with other printing, but is a daily "must." Every Monday morning in June of this year we had an average of 6,375 folios of congressional copy on hand to be set. By the end of the workweek, there was twice as much on hand, which could only be handled by Saturday (overtime) work. On June 21, 1947, an overtime day, 7,500,000 ems of type for congressional printing, requiring 1,615 hours of composition time, had to be set.

SUPREME COURT UNIT

Our new Supreme Court Unit in the first 9 months of its operation required by the term of the Court completed 144 opinions, aggregating 2,463 type pages. Location of the Unit in the Supreme Court Building contributed to more frequent requests for revisions than in the past, proofs being returned an average of 4.5 times for changes. In all, the Unit pulled more than 250,000 proof sheets. Preliminary prints, assembled from the 144 opinions, averaged 225 pages; and the bound volume, a subsequent pick-up of 4 preliminary prints, contains about 970 pages.

Equipment in the Unit, consisting of two slug-casting machines, an electric proof press, and a reproduction proof press, as well as all necessary supplementary equipment, was taken from the Composing Division. A working compositor in charge, three machine operators, and one laborer constitute the working force. (See also p. 177.)

SHORTAGE OF EQUIPMENT

The Division has been seriously handicapped by shortage of typesetting-machine parts, brought about by scarcity of materials, large backlogs of orders, and strikes in the plants of suppliers. At the end of the fiscal year there were 29 outstanding orders for critically needed typesetting material—parts, matrices, and spacebands. Some of these orders were placed more than 2½ years ago. The fantastic increases in the cost of such material when it is obtainable is a big factor in the overhead of the Division.

A model C Intertype, secured from war surplus, has been installed in the Patents Section to replace in part two machines taken from that Section for the Supreme Court Unit.

CONFORMITY TO STANDARDS

During the past few years, the ordering agencies have had adequate printing appropriations. Now, in order to meet requirements with the

funds available, they will have to become more economy-minded. They have been repeatedly advised by this Office that one of the principal factors of cost is the waste represented by alterations made after type is set instead of in the original copy. They also must make their publications conform to Government Printing Office size, equipment, and typographical standards. The Office can continue to turn out a limited amount of de luxe printing but only at a cost in keeping with the nature of the work.

SCHEDULE FOR EVERY JOB

Departments and agencies are securing unprecedented service from the Office through the establishment of a schedule on every job submitted. They undoubtedly would protest vigorously if it were necessary to revert to the pattern followed before the war, when the Division worked on the oldest job first and avoided expensive machine changeovers until each separate class of composition was completed. The war-time tempo killed the old procedure, but it at least had the advantage of keeping production costs at a minimum.

UNUSUAL JOBS

The following items are not intended as a complete list of unusual jobs. They are cited merely to show the pressure put on some work and the action necessary to meet special demands. We are constantly being called upon to put through unusual requests—some amounting to only a few man-hours' effort and others running into the thousands.

On June 11, 1946, the President signed Public Law No. 404, which required that special articles, describing the functions of each agency of the Government, be made available to the public through printing in an issue of the Federal Register 90 days later, which was September 11. The Office divided the daily Register for that date into two parts—part I to contain the regular daily material and part II to include the remainder of the issue. Combined, they made 1,094 pages—128 pages in part I and 966 pages in part II, produced in 9 working days, including 5,470,000 ems of composition, and a proportionately heavy amount of presswork, binding, and mailing. During these 9 days the daily Register totaled 560 pages of composition—an average of more than 60 pages a day over and above the special issue.

Several times throughout the year the Office was called upon to perform unusual service on work for the Justice Department. An outstanding instance was the brief for the Supreme Court filed Monday, January 13, 1947. The first 113 folios of copy were received late

on Wednesday, January 8, page proofs to be ready at 9 a. m. on the following day. The last six pages of manuscript were received at 8 a. m., just 1 hour before the dead line for page proofs. They were immediately put in type, proofread, and the job made up. Twenty sets of proofs of the 124 pages were delivered to the Department at 11:15 a. m. At 4:15 p. m. on Friday, January 10, they were returned to us with heavy alterations. About 50 employees were put on overtime to meet the Department's request: Revised page proofs by 6:30 p. m.; stone proofs by midnight; and 800 printed copies bound and ready for 8 a. m. delivery. The job when printed, consisted of a cover, title, 6 preliminary and 107 text pages.

The 1946 Report of the Chief of Engineers, United States Army, was printed from 6,066 folios of copy, which made 2,824 pages, bound in 2 volumes. The first pages of copy arrived November 19, 1946, and the last folio came in June 9, 1947. Proof of the beginning pages went out December 9, 1946, and the remaining proofs by June 24, 1947. The complete proofs were released by the Department July 1, 1947, approximately 7½ months from beginning the type composition. Thousands of man-hours were required to advance the production of this tabular-and-text annual report during the peak period of congressional-printing demands.

Copy of Interior Department hearings started in on February 17 and by April we received 4,252 folios. The day after receipt of the first copy, proof was sent out on 136 pages. This continued, and at 2- and 3-day intervals 11 sets of page proofs were forwarded until April 9, when 1,647 pages—the text part of this volume—were all in the hands of the committee. Final page proofs were returned April 9—late in the day—for press.

The first of the copy of part 2 was received March 25 and the first proofs were delivered to the committee the next day. The last of the text came in April 4. The final proofs of the pages were forwarded April 8, and returned for press with the index copy and 22 offset pasters, April 10. This part made 32 press forms.

First copy of part 3 reached us March 25 and last of text April 10. The index to this part, consisting of 299 folios, was received April 14 and, as proof was waived, the job went to press on the night of April 14. It made 95 press forms. (See also p. 172.)

On January 2, after 4 in the afternoon, the Division received returned galley proofs and additional insert copy of the testimony before the Special Committee To Investigate National Defense, with an urgent request for 500 bound copies the next day. This was an unusually heavy assignment to throw in on the night force, particularly in view of the other work on hand the night before Congress was

to convene. Forty-four forms, consisting of 698 pages, had to be locked up and sent through the presses. The fact that bound copies were ready at 8 a. m. shows once more some of our unusual performance on requests for overnight and almost instant service.

Copy for Merchant Vessels of the United States consisted of 58,888 folios, mostly index cards, making 824 pages, 11½ by 9 inches, mostly tabular. Submission of copy covered a 10-month period.

Statutes at Large is a heavy publication, each volume being in two huge parts bound separately, trimmed pages 7¾ by 11⅝ inches. Volume 60, part 1, consisted of 1,328 pages. Copy arrived for these volumes over an entire year—some of it for new volumes even before the old volumes have been completed. Volume 60, part 1, was processed on the following schedule: Copy to the Government Printing Office started April 8, 1946; completed April 18, 1947. Page proof to Department started April 30, 1946; completed May 18, 1947. Plate proofs to Department started May 1, 1947; completed July 11, 1947. At the time of this writing, volume 60, part 2, is being processed in advanced stages at the same time as copy for volume 61, part 1, is coming into the Office, and the production chain starts all over.

The first Budget copy was received in the Office November 19, 1946. Up to December 12 only 2,511 folios had been received, but from December 12 to 22 an average of 1,167 folios per day was received. The last copy of the 13,452 folios reached us January 3, 1947. More than 80 percent of the type composition was done between December 12 and January 2. On December 30 to 31 we released for printing 1,350 pages, and the final 278 pages were printed on the night of January 4. Delivery was made on January 7.

The printed Budget made 1,628 pages, 314 more than the 1,314-page Budget for 1943, the largest on record up to this year, and 652 pages more than the 976-page Budget of last year. All programs were included in one print of the Budget for 1948, the estimates of appropriation printed in the war agencies supplements for 1944 to 1947 and the corporations' supplement for 1947 having been incorporated.

PATENT OFFICE PRINTING

All Patent Office printing, except reprints (see p. 188), is produced in our self-sufficient Patents Section—typesetting, proofreading, imposition, and lock-up. Presswork for the text pages of the Official Gazette and the two annual indexes are done in our regular pressrooms. During the year our Patents Section imposed and printed 11,177 forms (8 pages each) of specifications.

In 1937 emphasis on the necessity for utmost economy brought about

a reorganization of production and procedure. The Public Printer's Annual Report for 1938 explains in detail the circumstances leading to the reorganization. Since that time production has conformed to requirements in every respect, there have been no criticisms of charges for work performed and no further proposals to change to allegedly cheaper but less satisfactory methods of processing.

Patent work, decreasing progressively through the war years, experienced a further decline in the fiscal year 1947, although there was a slight uptrend in the final 2 months of the year. Issues of patents, trade-marks, designs, plant patents, and reissues for the year totaled only 31,022, compared with 34,268 in 1946, 37,648 in 1945, and 37,336 in 1944. The figure for 1939 is 58,073.

There were 124 employees in the Section as of June 30, 1947, compared with 130 and 136, respectively, in the fiscal years 1946 and 1944. These figures may also be compared with a prewar roll of 195. The work of the Section has been stabilized by assigning to it other jobs suitable for it, such as the very large Supplement to the Code of Federal Regulations. There has also been some reallocation of equipment, notably to the new Supreme Court Unit.

The backlog of applications awaiting action at the Patent Office has mounted to 148,028 specifications and 13,638 trade-marks, compared with a maximum of only 40,000 items awaiting action during prewar years.

Recent advice to this Office is that more examiners are now at work, and that the number of applications allowed is steadily increasing. It is, therefore, logical to expect a sharp increase in patent work.

One of the beneficial features of the reorganization designed to promote economy by keeping in-type corrections at a minimum, is the preparation of specification copy at the Patent Office by Government Printing Office employees on detail to that Office. Probably 50 cases of each weekly issue are returned by the preparers for correction of errors that have been detected prior to setting of type. This service continues to yield benefits not only in time and money saved but also in better quality of the product and in good will.

While changes in rules and regulations at the Patent Office have resulted in incorporation of additional material in the Official Gazette, the total number of pages was slightly under the figure for the previous year—9,524 pages in the weekly issues against 10,274 in the fiscal year 1946.

In January 1947 the Gazette appeared with a newly designed cover, a new title page, and the addition of a table of contents. The March 17 issue came out with a somewhat simplified page format. These changes make the publication more usable and attractive.

PLATEMAKING DIVISION

In the fiscal year 1947 platemaking production increased over 1946 by 14½ percent, with a reduction of 6 percent in the number of production employees.

Compared with 1939, when the last annual report of the Public Printer was printed, the increase amounts to the amazing figure of 318 percent, more than four times our prewar production. In this 8-year period total personnel in the Division increased not 300 but only 49 percent. There were 140 employees in 1939, 222 in 1946, and 209 in 1947.

The following figures show the comparative production, in square inches, for all printing-plate media:

Class of work	1939	1946	1947
Photoengraving.....	828, 459	1, 092, 517	1, 119, 041
Offset negatives.....	2, 259, 752	7, 261, 204	9, 397, 984
Electrotypes.....	6, 037, 986	7, 631, 048	6, 649, 391
Stereotype plates.....	4, 961, 637	9, 838, 590	8, 935, 481
Stereotype mats.....	982, 274	27, 359, 441	34, 213, 165
Rubber plates and stamps.....	56, 162	86, 701	140, 196
Plastic plates.....		1, 954, 569	3, 418, 562
Total.....	15, 126, 270	55, 224, 070	63, 873, 820

In addition to the production listed, 500,000 square inches of "molds only" were made in vinyl plastic during the year. This is equivalent to 10,000 book pages. The molds are stored for future reprint instead of the much more expensive heavy pattern plates. Through the cooperative efforts of the Platemaking and Planning Divisions in specifying this more economical storage medium in the writing of jackets, the Plate Vault now has 35,000 plastic molds stored for reprint.

IMPROVEMENT IN METHODS

Since 1939, introduction of many new methods and materials has greatly changed platemaking operations and explains in large part the spectacular increase of production.

By the improvement and simplification of methods, standards of quality of production also have been raised and health hazards reduced.

In photoengraving, the use of thin-base film and strip film has resulted in the elimination of the silver-bath and rubber-collodion coating of glass wet plates. Electric etching machines have been of great assistance to copper etchers, and electronic light-exposure controls have contributed to more accurate timing in photography.

Offset-negative making has been advanced in efficiency through the installation of large overhead darkroom cameras, with vacuum copyboards and vacuum backs for holding the film during exposure. Offset-film quality is being constantly improved. The new magenta contact screens, made of film, have been an important factor in the improvement of halftone work which now is being printed both from glass and film-contact-screen negatives. Advances in procedure have kept pace with improvements in equipment and supplies.

Electrotyping methods which have been considered basic and fundamental for 100 years have been discarded within the last 3 or 4 years. The 12 major operations formerly required to make an electrotpe have now been reduced to 6. Wax is no longer used on general electrotyping in the Government Printing Office. Wax-case heating cabinets, dry black leading, wet leading machines, building, and oxidizing have all been eliminated except on the small number of wax-rule forms, which cannot at this time be ruled on any other material. This ruling operation now is carried on in a small room completely separated from the Electrotyping Section.

The Stereotype Section has turned entirely from wet mats to the modern dry mats in the making of plates for the Congressional Record, Federal Register, and many other important jobs. Dry mats were not used in the Government Printing Office prior to 1940; yet, during the war, production on this item for 1 year was over 225,000,000 square inches for various Government departments and agencies in addition to the amount used on Government Printing Office printing. In 1946-47 department orders for mat service were still at a high figure—over 34,000,000 square inches.

The reduction in plate thickness of curved speech-press plates from one-half inch to our standard book-curve thickness of 0.177 inch, cut the weight from 12 to 4 pounds per plate and halved the time necessary for casting.

PLASTIC PLATES

In 1941 the Government found it necessary to establish a service to supply lightweight printing plates to combat areas and to foreign newspapers. Plastic platemaking was then only on an experimental basis. Through developments in this Office, the Public Printer was able to begin immediate production. At the same time we undertook to set up and train four contractors to help in the work and thus greatly increased the initial facilities. Whereas 1 man and 1 molding press were adequate in 1939 for making rubber plates and stamps, peacetime production of plastic plates in this fiscal year was 650 plates daily with 5 men and 7 presses turning out more than 3,500,000 square inches.

From the beginning of the plastic-platemaking program to date, 599,949 plastic plates were made in the Division and 719,585 were procured from commercial sources.

Only by following closely the developments in the platemaking field and, in fact, taking a leading part in some of the tests and experiments which brought about the increased ratio of production, were we able to meet the tremendous demands made upon us by the war. Many developments originating or perfected in the Platemaking Division have been adopted as standard trade practice by commercial plate-makers.

PLATE VAULT SECTION

Personnel figures for the Plate Vault have not been included in the foregoing because these employees are not engaged in production. This Section had 22 employees in 1939, 55 in 1946, and 59 in 1947. It may be pointed out that this includes a number of unskilled employees who have been trained for this work.

Until the war, the Plate Vault received, recorded, stored, and reported only plates and original halftones and line cuts made and used in the Government Printing Office. In 1947 the Section has grown to cover the recording and reporting on every reprint medium used in the plant in addition to approximately 850,000 units returned by contractors all over the country.

The expansion of duties has completely filled the original available storage and office space and requires the use of space borrowed from another division. During the year under report, this Section has had the further duty of reporting all reproducibles stored by each department so that unessential matter can be killed. Tons of valuable metal have thus been recovered.

Through cooperation with the planning divisions, and as a result of their experience in processing requisitions, a central information unit has been established in the plate vault which has halved the time required for reporting reprint media on hand.

INTERDIVISIONAL COOPERATION

The planning divisions have worked closely with the Superintendent of Platemaking in utilizing the modern production methods which have been developed in Government Printing Office platemaking and thus insured the utmost economy in the use of plates in the Office and on commercially procured work. Through interdivisional conferences, rigid specifications have been developed for commercially procured plate material. Substantial economies to the Government

have resulted from the Planning and Accounting Divisions' careful scrutiny of cost charges, with platemaking officials serving in a consulting capacity when technical questions have arisen in connection with billing. Cooperation by the Division of Tests and Technical Control has consistently improved the efficiency of our depositing and other chemical solutions. The teamwork shown by associate production officials in working together to meet the problems of the programs laid out by the Production Manager has been an equally important factor in the success of this Division's work during the year.

PRESSWORK DIVISION

The Presswork Division is extremely sensitive to the slightest change or variation in the nature of public printing, in the supplies and materials available for it, in the quantities required, in the quality expected, and in the method of production used.

Like all other production divisions, our pressrooms have been affected most by the volume of work required to be done on critically short schedules. After that, the paper situation has been our greatest headache. Not only has it been necessary to use many substitutes not best suited to our equipment or for the job to be done but we have also had to contend with stock not properly seasoned, having a poor printing surface, or generally in bad condition.

There has been a constantly increasing demand in the ordering agencies for better classes of work, more illustrations, more halftones, and more color. All this calls for greater care in the Presswork Division and is reflected by the proportionate increase in make-ready time in the past several years.

WORK LOAD AND PERSONNEL

There has been no great change in the Division's total work load because of the Office's ability to keep it stable by adjusting the commercial-procurement program, and the proportion of preparatory (make-ready) work has decreased as the quantities of publications on order have gone down. Press group assignments also change with reduced quantities, and the fastest presses in the Office have been idle part of the time during the year because they are not adapted to economical production of short runs.

Finally, the Office has two principal methods of production—letterpress and offset. Whichever is selected, the press equipment available is immediately limited by the choice.

Production figures for the Offset Press and Card and Money Order Press Sections were well above those of the previous year.

The number of impressions in the Main Press Section on all presses, except roll-fed rotary, remained close to the previous year's production.

Total impressions in all press sections amounted to 901,350,293 against 988,101,372 in 1946. Forms put to press totaled 146,197, including offset plates.

The Presswork Division operated 190 presses on 3 shifts, with a full complement of employees on the day shift; a somewhat smaller third shift; and a skeleton intermediate force, whose principal function was to finish critical jobs and advance the work on congressional printing. A small night force is on duty in the Card and Money Order Press Section. There was a 3½-percent reduction during the year in the number of employees in four sections and on all shifts of the Division. The total of 1,135 on June 30, 1947, was made up of 23 supervisors, starting with the rank of assistant foreman, 475 pressmen, 19 press assistants, 428 presswork operatives and skilled laborers, 22 press feeders, 18 revisers, 25 clerks and messengers, and 125 employees doing other classes of work.

Like other divisions, the pressrooms have had to produce during the year a terrific volume of rush work for Congress, and frequently readjustment of work assignments, with consequent lifting of forms, interruptions to runs, and loss of production time, has been necessary. Nearly all overtime has resulted from congressional printing.

Records show that approximately 2,500 more bill forms were printed toward the end of this fiscal year for the first session of the Eightieth Congress than for a like period of the Seventy-ninth Congress. Continued ordering of bills in such quantities will require a number of additional small presses to avoid delays in other work. The Public Printer's modernization committee is studying this matter.

The amount of work assigned to the Record presses has resulted in practically continuous, around-the-clock operation. There was a decrease in the size of the Federal Register. The Airman's Guide, consisting of 192 pages per issue, is being produced biweekly on the Record presses.

OFFSET PRESS SECTION

Work of the Offset Press Section continues to show a progressive increase, despite discontinuance of tabulating-card manufacture. Production has been facilitated by installations of improved dampening and form rollers. Their use greatly increases the life of the offset plates,

100,000 impressions or more from 1 plate having been made in some instances. A better grade of negatives, both for illustrations and type, has brought about a decided improvement in the quality of work. Large economies are achieved by the use of paper negatives on certain classes of publications.

A Webendorfer Perfecting press, printing from an 8½-inch roll, has been acquired from surplus. It is too small to be suitable for a large volume of work and has been operated on an experimental basis.

No other new offset-press equipment has been added during the year, but study is being made of departmental requirements to determine whether acquisition of more presses would be justified.

Figures of production by the offset method for this and the immediately preceding fiscal years are given in the following table:

Class of work	1945-46	1946-47	Increase
Jackets processed.....	3, 527	3, 961	434
Forms put to press.....	13, 537	16, 293	2, 756
Impressions.....	90, 284, 039	95, 611, 061	5, 327, 022
Negatives received.....	114, 156	151, 405	37, 249

CARD AND MONEY ORDER PRESS SECTION

Postal-card production in the Card and Money Order Press Section amounted to 2,865,285,000. Money-order forms of all kinds amounted to 291,091,150. This represents a considerable increase in both classes of work over the previous fiscal year. The difficulty of securing stock and supplies has frequently slowed down production in both units. This applies particularly to money-order safety paper.

During the year the Post Office Department ordered 30,000,000 air-mail letters, subsequently reducing the quantity to 15,000,000. These forms were run on one of the money-order presses, the Maintenance Division having installed a gumming attachment and drying unit. Experience gained in the manufacture of V-mail letters enabled us to handle the new forms efficiently and expeditiously.

Through a work-simplification proposal, the printing of reply postal cards is being accomplished at an approximate saving of \$1,900 annually.

JOB PRESS SECTION

There has been a slight falling off of production in the Job Press Section as a result of reduced orders for this class of work. Some publications have been shifted from the Main Press Section to keep the equipment in operation during slack periods.

A work-simplification proposal has increased the production of embossing work by 25 percent and reduced its cost by an even greater percentage. All blank embossing is now done on automatic-feed platen presses instead of the heavier hand-fed machines.

OLD PRESSES

The most serious problem of the Division is the large percentage of idle time on roll-fed rotary presses. This particular group of presses is among the oldest in the Office. One was installed in 1897, two in 1905, one in 1911, and one in 1923. The over-all reduction in the press-impressions total is almost wholly attributable to increased standing time for this group. Several units have not had more than 50-percent production during the year. One of the group, a four-unit Kidder press, is being redesigned for the manufacture of snap-out forms. The magazine rotaries, kept busy during the war on long-run pamphlets not requiring high-class illustrations, are unsuitable for economical production of the smaller orders now being received.

Many tests and experiments with drying apparatus have been made by the Maintenance Division to facilitate use of the magazine rotaries for high-class illustration work. Our Division of Tests and Technical Control has tried to work out quick-drying-ink formulas. Unfortunately these presses can do only the class of work for which they were designed—larger numbers of pamphlets, printed both sides simultaneously, without heavy halftone illustrations, folded and stitched or pasted during the run. Modern magazine presses are of such totally different design that it would probably be cheaper to scrap our machines and buy new ones than to attempt to fit them for other classes of work. The job rotaries, in addition to their age, are not suited for current production. Our committee on modernization is now considering which units of this press group should be condemned and sold.

BINDING DIVISION

In a mixed bindery as large as that of the Government Printing Office it is necessary to perform literally thousands of different operations and combinations of operations. While a large percentage of work has been standardized and is more or less routine, there will always remain an even larger percentage of jobs which must be handled on the basis of their individual requirements. For jobs of this class it is nearly always necessary to organize special working crews and exercise the utmost ingenuity in establishing the most suitable

method for doing the work. These jobs need constant vigilance, thorough planning, and complete cooperation of every employee and supervisor in the bindery and in other divisions processing them. Otherwise delays occur, costs mount, and an unsatisfactory job results.

The bindery is the last division to receive every publication that is produced by the Office. It therefore has the responsibility of trying to make up any time that may have been lost elsewhere in production. It has that final dead line to meet. It can never look to another division to help pick up its failures. It gets all the frantic calls to expedite delivery as dead lines approach. Many large publications practically roll off assembly lines until they are trucked into the bindery for some of the necessarily slow and laborious operations involved in bookmaking.

MACHINES AND PERSONNEL

We operate approximately 250 heavy binding machines performing about 25 major classes of work, far more than there are in any other production division. We have 1,447 employees, compared with 1,351 in 1939, 2,097 in 1943, and 1,587 at the end of the fiscal year 1946.

The great diversity of operations to be performed calls for extraordinary versatility on the part of our employees. Although versatility is a part of their training and background, a conscious effort is made at all times to attain even greater utilization of available skills by the interchange of employees between sections.

METHODS AND WORK LOAD

We rarely fail to deliver on schedule. Almost without exception, we release the many periodicals on the specified completion dates. We have developed methods that have been adopted by the commercial industry, and we watch closely for new commercial methods that can be applied to the Government's printing. We expect to profit by the research being carried on jointly with Printing Industry of America, Inc., and that organization has shown much interest in many of our methods.

During the past fiscal year, the greatest strain on the Binding Division has resulted from the extremely heavy volume of congressional work. The most important function of the night shifts during sessions of Congress is the handling of congressional printing, and they ordinarily complete all binding operations on it by 9 a. m. In the session that began January 3, 1947, the requirements for binding various bills, resolutions, hearings, calendars, reports, and other documents were so

heavy that the day shift regularly had to pick up the overflow, which often kept that shift busy until noon and sometimes until 3 o'clock in the afternoon.

The reduction by the departments, notably War and Navy, in the number of copies ordered on many publications as compared with wartime requirements has somewhat reduced work loads in the bindery while requiring no less production in divisions engaged in earlier phases of the work. Through close coordination with the planning divisions, it has been possible to stabilize production by returning flat sheets to the Office bindery when commercial procurement has been necessary on composition, platemaking, and presswork.

This has required laying out the work for the commercial printer in such a manner that it could later be most economically processed in the Government Printing Office bindery. The Division of Plant Planning has been cooperative in considering the bindery's problems when preparing plans for work in other production divisions. Closer attention is being given to this aspect of planning, and it is believed that studies now being made by planning and production divisions will make possible even more closely detailed advance instructions for production in order to obtain maximum utilization of equipment. The most serious objection is the difficulty of relating work loads to the limited availability of certain types of equipment. For example, it is impossible to assign all work to 2 of the 38 folders just because they are most efficient on a large percentage of our work. Obviously, they represent a small percentage of folding equipment. The other folders must be used, too. The time and cost records, supplied by our Accounts Division, are invaluable in helping to maintain control of production.

MAINTENANCE AND IMPROVEMENTS

All our operating equipment has been kept in an excellent state of repair by the Maintenance Division, and its preventive-maintenance program has reduced "down" time to a minimum. During the year several obsolete pieces of equipment were disposed of and recommendations made for disposal of several others. A gathering-and-stitching machine, a stripping machine, and a perforator have been received from surplus. Orders have been placed for certain vitally needed equipment, but receipt is slow.

Work-simplification proposals have been submitted by employees and supervisors to improve several pieces of equipment by alterations and additional parts. Some have been adopted, to the distinct benefit of the Office. One proposal covered the manufacture of an entire machine for weatherproofing. It is performing satisfactorily at speeds

far in excess of hand production. Improvements in equipment and methods are regularly and frequently ordered by officials of the bindery and by higher level administrators. A strip-gumming machine, manufactured by the Office in the 1946 fiscal year, turned out 4,250,000 forms at speeds in excess of 9,500 hourly. Production is being further improved by the use of a jogging table at the delivery end. The strip-gumming machine is well adapted to the manufacture of mailing wrappers which can be used as a substitute for envelopes. Ordering departments have been advised of its availability.

Gathering racks, installed upon the recommendation of our Consultant on Methods and Procedures, have greatly speeded up this class of work.

PAPER AND BLANKBOOKS

The Binding Division processed all the paper used in the Office for public printing and binding. Enough examples of typical jobs out of the tens of thousands handled will be described to illustrate the nature of our work—the contributions which the bindery makes to the production of public printing and binding.

We produced 1,500,000 cased books, 2,500,000 paper-covered books, and a large volume of miscellaneous work. On two shifts, we cut and packed 264,000,000 full-size blank sheets and 171,000,000 printed sheets. We applied improved methods to the manufacture of 2,508,000 stenographer's notebooks. We processed and delivered 20,000,000 copies of congressional prints produced on our speech presses. We kept up at all times with production of the Congressional Record, and home delivery to Members of Congress was made without a single complaint.

A FEW OUTSTANDING PUBLICATIONS

The largest bound job received during the year was the Yearbook of Agriculture. The edition totaled 242,384 copies, of which all but 500 were full-bound in black fabrikoid. The completed book is exceptionally rich looking, thanks to the ingenuity used in the Division of Typography and Design to dress up the black book cloth, which was the only material available in the needed quantity. This publication contains 944 pages. The gathering exceeded the capacity of any machine available and had to be done in two parts, which were later assembled to complete the volume. Each volume is 2½ inches thick and weighs 3.64 pounds. The entire issue weighs in excess of 440 tons.

Another bulky publication was Sig 5: Army Service Forces Catalog, in four volumes, containing, respectively, 742, 996, 1,494, and 1,720 pages. The unusual bulk of this catalog presented its principal

problem in the space its material occupied while the books were in process of manufacture. In the delivery of the total of 59,755 copies to 21 points, 6,388 cartons were required. Plans for this volume called for Perfect-binder style. Volume 3 exceeded the capacity of the Perfect binder, and it was necessary to do the work by hand. The Division of Tests and Technical Control provided invaluable assistance by developing a polyvinyl-acetate emulsion to take the place of the glue ordinarily used on the Perfect binder. This substitution resulted in an improved binding. Tests are being carried on to determine whether this machine can be altered to permit regular use of the emulsion.

Still another job that required careful planning and close coordination was the terminal-leave application, printed for the War Department. These forms were required to be delivered immediately after the President approved the bill for payment of terminal leave to enlisted men. As an indication of the burden placed on our bindery, it may be pointed out that sheets, of different sizes, from 23 different presses, came to the bindery, almost simultaneously, for folding and cutting. Some were 4-up, some were 8-up on a sheet; some had been folded and others were delivered flat; some had money-order-application forms printed in the waste. The job was put through all shifts of the bindery for folding, cutting, and packaging. The complete delivery was made in 7,274 cartons and 7,982 wrapped-and-tied packages. The quantities to be mailed were delivered on skids to our Documents Division to be sent by it to every post office in the United States. Earliest shipments mailed, both from Binding and Documents Divisions, were sent to farthest points first.

The manufacture of wing binders, usually made by hand, was turned into a machine job several years ago by alterations and additions to a stripping machine. An order for binders for 28,500 Mortgagee's Handbooks looked like a hand job because the loose-leaf book was too thick to permit the wings to be made on the converted stripper, but further alterations on the stripping machine solved the problem and resulted in a big saving.

The Pearl Harbor hearings, consisting of 39 volumes and requiring 7,770 copies of each, offered many problems. Part 38 contained 302 pasters requiring intricate folding and special sewing. It was necessary to use half a million stubs to build up the backs of the books to allow for the bulk of the pasters which did not extend into the binding edge.

A description of the operations necessary in the production of the Interior Department appropriation hearings is supplied here as an example of the problems presented by almost any large bindery job.

Part 1 made 1,664 pages, or 105 signatures. (A signature is one or more large sheets folded down to book size.) The required signatures

exceeded the capacity of the gathering machine and each volume had to be gathered in two sections and then assembled for sewing. Press sheets did not reach the bindery until April 10, but folding began immediately and the first delivery of part 1 was made 4 days after the receipt of press sheets.

Part 2 had 570 pages and 22 pasters tipped in at 11 different places in the volume. The most experienced girls in the bindery were assigned to this work. The first delivery on part 2 was made on April 15.

Part 3 consisted of 1,524 pages and 132 pasters. The tremendous number of text pages and the tipping in of the pasters called for well-organized crews and careful synchronization of operations.

A volume of this kind is produced in the following manner: Imperfect or spoiled signatures from other publications are gathered and sewed into the book wherever pasters are to be tipped in. These signatures are perforated near the folded edge and are removed by tearing out after sewing. They permit machine gathering to be done in the usual manner and after removal leave a stub to provide space for the folded paster.

Part 3 was gathered in three sections of 27 signatures each. It made a book over 4 inches thick. The total quantity of copies required 396,000 signatures. Hand covering was necessary because the publication exceeded the capacity of covering machines.

Two flat-bed cutting machines had to be padded and built up for trimming of this volume because of the uneven thickness resulting from the tipped-in pasters.

In organizing work crews, it was necessary to detail the most skilled operatives from several sources, the Book, Blank, and Money Order Sections. The working crew as finally established in the Pamphlet Section numbered 38 girls.

The 132 pasters were inserted at 42 places in the volume; 10 additional girls in another section were assigned to removing the imperfect or dummy signatures. Production continued through all shifts, with the result that 50 advance copies were completed on April 18. Two hundred copies had been requested for delivery on April 19; we had 369 copies ready, and the entire order of 1,000 copies was delivered on April 23. The hearings—the 3 parts aggregating a total of 3,758 pages and 154 pasters to a set—was processed in 13 days, during one of the peak periods resulting from our congressional work load. (See also p. 159.)

LIBRARY OF CONGRESS BRANCH

The Library of Congress Branch of the Government Printing Office consists of two sections, one for the setting and printing of catalog

cards, the other for what might be called maintenance binding. Several times in the past, efforts have been made to secure a part of the Branch's work—both composition and binding—under contract from commercial firms. These efforts were entirely without success.

During the year, in spite of several changes in the Library's ordering and the addition of new classes of work which might have been expected to reduce the quantity output, there were substantial production increases over the previous year.

COMPOSING SECTION

The Composing Section had 51 employees as of June 30, 1947, consisting of 16 linotype operators qualified to set type in many languages, 10 foreign-language proofreaders, and 5 pressmen. The remaining part of the staff consists of supervisors, compositors, imposers, makers-up, miscellaneous composing and presswork operatives, a laborer, and a clerk. There were two retirements and eight transfers to the rolls, making a net increase of six employees, including three additional proofreaders. This was the result of a request from the Library to "double-read" all classes of catalog cards. This procedure has proved very satisfactory to the Library. By abolishing its Proof Section more than \$5,000 a year, over the cost of the additional reading, is saved.

Although the Section combines every possible operation in the printing of catalog cards, every title and every overprint must be handled in some respects as a separate job. Thus, when 1,191 job forms are added to the card orders, the total number of jobs produced during the year is in excess of 400,000, with an average of only 135 copies each. Subject-heading cards are overprinted in quantities as low as 3; but even with all this great variety of titles and subjects, total card production for the year was 44,124,000. There was a 10-percent increase in the number of titles and subject headings as compared with the previous year, and 462,000 more cards were produced. The following table gives comparative figures for this and the immediately preceding fiscal years:

Class of work	1946	1947
Chargeable impressions.....	59, 621, 833	57, 158, 385
Actual impressions.....	5, 528, 686	9, 039, 224
Chargeable forms sent to press.....	10, 694	13, 605
Actual forms sent to press.....	8, 242	11, 254
Subject-heading lines sent to press.....	178, 894	206, 189
Subject headings printed.....	644, 422	732, 278
Call numbers printed.....	1, 197, 627	1, 008, 107
Guide cards printed.....	10, 100	2, 525
Number of jackets written.....	877	698
Number of jackets closed out.....	808	715

During the year the minimum quantity on some classes of catalog cards was reduced, which cut down the production figures but required practically the same amount of work. The quantity of cross-reference cards has been reduced from 150 to 35 copies and on some regular catalog-card forms from 200 to 100. These reductions are only slightly reflected in the work load of the Section because of the very small press runs. None of the typesetting, reading, imposing, and other preparatory work are eliminated. The Section also received new classes of work which added very little to production figures but increased by 38 percent the number of forms locked up and printed.

The most important new job was the printing of titles to be included in the Cumulative Catalog. Nine sets of cards were required. The catalog was first projected several years ago, when it was contemplated that each volume be set in type for a monthly listing, the type to be stored and reassembled with added entries for the quarterly issue. The undertaking was so tremendous and so expensive that the first plans could not be carried out, but in the meantime the Planning Divisions in the Government Printing Office explored other methods of doing the work. The Library had objected to the unsightly and space-wasting make-up that would result from use of cards in photolithography.

Finally a card-alining device was constructed, which has solved the problem. The cards are laid out in columns on a master card, proportionally spaced, stripped into place, and reduced to page size by photography for lithographic reproduction. They are then removed from the master card and returned to Library files for use in future catalogs. The Library is entirely satisfied with the results and is using the same method for cumulative listings of copyrights.

This work requires that the Composing Section print nine additional copies of the catalog cards and four copies of the copyright entries. However, in order to make the cards, as originally printed, suitable for inclusion in the catalog, it is necessary to remove each form from the press, take out descriptive material, respace it so that only the title and reference marks remain at the top, then lock up the forms again and return to press for the necessary number of copies. The floor work is out of all proportion to the short press run, but the saving in over-all cost of the cumulative listings more than justifies the extra labor.

The added-entry cross-reference cards are another new class of work handled this year. These cards require composition, proofreading, make-up, imposing (40-up), and printing of 9 copies.

A new (Army surplus) press has been obtained. It is at present at the Government Printing Office machine shop, having a foot-operated

gear shift installed. This is a specially equipped press similar to the one now used for handling from one to three linotype lines for overprinting catalog-card subject headings. The printed quantities on these cards are very small, averaging four copies. A quick-change locking device for inserting and releasing linotype slugs eliminates the necessity of lifting the form for each change. This additional press will take care of the big increase in overprinting and eliminate overtime in the future on this class of work.

The Printing Unit has the mats for accented letters and diacritical marks needed for many foreign languages.

Not only does it set the more common languages daily but the less familiar, such as Icelandic, some of the American Indian, or the tricky New Turkish, also appear; as well as the obsolete languages, such as Old German and Latin incunabula. The latter require dozens of special characters, some of which have had to be made especially for the Library's use.

The Library sends hundreds of catalog titles at a time to be set in non-Latin characters—Greek, Hebrew, Gaelic or "Russian," which term is used here to include Bulgarian, Serbian, and other Cyrillic languages besides Russian itself. Greek and Russian are machine set, and on these machines English can be set in the same line with the non-Latin characters. While a few print shops specialize and do considerable work in one or a few of these languages, probably no other in the world does such a quantity of work in such a variety of languages.

BINDERY SECTION

The Library of Congress and the Government Printing Office have cooperated to reduce the cost of all the Library's bindery work, with the aim of securing production of the largest possible number of volumes out of the funds appropriated for the purpose.

Both organizations have surveyed the possibility of partly accomplishing this aim through commercial contracts, but the difficulty of securing bids resulted in the abandonment of this approach and, instead, efforts were concentrated on cutting Government Printing Office charges. After thorough study of the problem from many angles, we set up specifications for four classes or grades of work where there had formerly been only one and recommended their adoption. The Library accepted the plan. It is now easily possible for the Library to designate, by a simple checking procedure, first-class work when it is required, or to indicate that the nature of the material to be bound or repaired justifies only casual mending and less expensive material.

Under the new plan the amount of production has been greatly in-

creased and the cost comes nearer meeting the Library's conception of what it should pay. The Library and the Office are continuing to explore every avenue that may lead to further economies. The most recent effort along this line was a joint survey of commercial methods of library binding.

The Section does every kind of bindery work required by the Library. Because almost every volume varies in size, thickness, kind of covering, or other characteristics, mass production methods cannot easily be applied, and each job is usually done by one workman.

During the year, the Library Branch bindery completed the binding of 65,238 volumes. This represents an increase of 15 percent over the fiscal year 1946. This comparison holds true all the way down the line, the most noticeable increase being in the repair and restoration of 77,357 manuscripts. The output in this Section was more than doubled, owing largely to the use of the laminating machine which was purchased by the Office for the Library Branch. One of the most recent jobs completed in the Manuscript Unit was the restoration of Abraham Lincoln's collection of letters and papers, which were opened to public inspection after having been in the possession of the Library since 1923. When bound, the collection made 194 volumes. There was a rigid dead line to meet on this project, and the Library was grateful when the job was accomplished without delay.

Another job worthy of mention is the binding of the court records of the trials of the Japanese war criminals, presented to the Library of Congress by the United States Army. This was a difficult binding job because of the many sizes and the quality and condition of the paper.

Early in the year the Section was commissioned to make a special mat and background for a copy of the Magna Carta, sent to the Library of Congress by the trustees of the British Museum for special exhibit here. Since no piece of leather was big enough for the purpose, it was necessary to cut up several strips and join the edges; the work also required difficult and exacting hand-tooling operations, in which 27 distinct tools had to be used.

The Section renovated or repaired 14,570 volumes for the rare-book room, handled 27,165 items for the Division of Prints and Photographs, and mounted or reconditioned 46,034 maps and atlases.

SUPREME COURT UNIT

Early in August 1946, officials of the Supreme Court of the United States sought the assistance of the Public Printer in the printing of the

advance opinions of the Court. For many years all advance opinions had been handled by Pearson's, a commercial printing firm. The Pearson shop had been closed at the end of the 1945-46 term of the Court and all equipment sold. Pearson's had handled no business but the Court's, and it had thus been able to provide a degree of security impossible in a shop producing a diversity of commercial printing; and, of course, Pearson's few employees had developed a knowledge of the Court's work and an efficiency in meeting its needs which could not easily be duplicated.

After Court officials had canvassed the local commercial houses without success, they turned to this Office for advice. The Public Printer held a number of meetings with planning, accounting, and production officials. The proprietor of Pearson's gave valuable information on the methods followed, the peculiarities of the work, and the rigid requirements of the Court. The conferences considered commercial production, printing in the Government Printing Office central plant, and establishment of a unit in the Supreme Court Building. The last proposal finally was deemed the most practical, and a detailed plan of operation was submitted to the Court on August 20, 1946, for approval. It was accepted by the Chief Justice of the United States on September 10. The Court assigned well-guarded space in the basement of the Supreme Court Building, equipment was moved in, personnel selected, and the Unit was ready for operation prior to convening of the Court early in October.

There are three phases of Court-opinion printing. The advance opinions are set in type as they are written, edited, and corrected by the Justices. They are highly confidential until delivered by the Court. After they are released to the press, security is no longer necessary. The next step is the gathering of a number of opinions into preliminary prints. Finally, the bound report is produced, of which there is an average of $2\frac{1}{2}$ volumes for each session of Court. Preliminary prints and bound volumes have always been produced in our central plant. Since we were now to handle all three classes of work, the Public Printer felt that a greater degree of coordination would result in economies and added efficiency.

Pearson's had always set the opinions in a smaller type and a wider measure than the Government Printing Office used for the preliminary prints and bound reports. By establishing the same format and type size for all three publications, about 90 percent of the advance-opinion type could be picked up for the preliminary prints. The savings thus made would be partly counterbalanced by the fact that the larger type and narrower measure would make approximately 30 percent more pages of advance opinions and thereby increase their cost in

proportion. The larger type, however, is more readable. Then, too, reuse of the original type means the elimination of errors that might otherwise result from resetting.

Other objections to the pick-up had to be overcome through planning. In order to use the advance-opinion type on the preliminary prints and bound reports, it would also be necessary to resort to offset lithography to maintain uniformity of type legibility. However, the Court representatives felt that the cost of reproduction proofs, negatives, and offset plates could be justified by the advantages to be gained in readability and accuracy.

Security requirements called for careful selection of employees to be detailed to the Supreme Court Unit and assignment of the absolute minimum number necessary for the performance of the work.

The Court convenes early in October and recesses in June. In the 3 or 4 months between terms of Court the preliminary prints and bound reports are handled. During the sitting of the Court, this material is used as filler if advance-opinion work lags.

In the preliminary discussions it was estimated, based on information from Pearson's, that about 12 hours' overtime per employee per week would be required during the term of the Court. The opinions average from 4 to 5 revisions each, and 13 to 15 proofs of each revision, collated into sets, are required. On the last revisions, always received on Saturday afternoon, from 2 to 7 p. m., about 90 proofs are ordered for delivery Monday morning. This causes most of the overtime, especially when 10 to 15 of these revised opinions are scheduled for simultaneous release.

Under present arrangements the type never leaves the Supreme Court Unit. When the advance opinions are ready to print, reproduction proofs are pulled from the type and sent to the Government Printing Office for making negatives and printing approximately 2,000 copies by offset. When the preliminary prints are ready for publication and press, and again when O. K. to print is given for the bound reports, reproduction proofs are taken and sent to our central plant for printing by offset. Under this arrangement there is not even a remote chance for error between the finally approved reproduction proofs and delivery of finished work.

The new Unit has completed its first term of advance-opinion work. Its success is manifest from the paragraph here quoted from a letter written by the Court Reporter on June 7, 1947:

I also wish to take this occasion to thank you and your associates again for the very fine cooperation you are giving us, and especially for assigning to the Supreme Court Unit such excellent men as the Chief of the Unit and the members of his staff. I think they are doing a grand job.

Production for the Unit is covered in the section on the work of the Composing Division. (See p. 157.)

DELIVERY SECTION

It is the responsibility of this Section to make deliveries of printing and binding to Congress and the local branches of the executive departments and agencies of the Government. We maintain 24-hour-a-day service. Delivery of the Congressional Record to the homes of Members is comparable to circulation routing of a metropolitan newspaper. We pick up "hot" copy, load and unload 1,800-pound skids, bring empty skids back to the Office, and attend to the carrying of every item of merchandise used or produced in a \$53,000,000-a-year business. We do all the back-and-forth hauling incidental to the work of so huge a manufacturing plant.

During the fiscal year, we made approximately 24,000 trips, with as many as 20 stops a trip. Our operating units traveled a total distance of 159,800 miles. We carried an average of 170 tons a day, 50,000 tons a year, the equivalent of 1,250 freight carloads. War-year figures were double those given here.

All this was accomplished with 29 war-weary light and heavy trucks and 4 passenger cars. Two of the heavy trucks have been pounding the streets of Washington since 1918. Despite the shortage of parts, our Maintenance Division has somehow kept the fleet of vehicles in operation and in reasonably good condition, but the need for replacements cannot be long deferred.

Many units of the truck fleet are badly worn from continuous service. Army surplus equipment has been inspected, but no vehicles of suitable type have been found available. One new 1½-ton truck was purchased on June 25, 1947. Eleven trucks are on order. Bidders declined to accept the old units as trade-ins. When bids were recently opened for the sale of 11 trucks, offers averaged \$128, an indication of their age and state of wear.

Of the Section's fleet, one truck is devoted solely to Superintendent of Documents' special deliveries, the cost being charged to that division. Six trucks are assigned to and operated by chauffeur-messengers of our Division of Planning Service for emergency deliveries and pickup of congressional and departmental work.

Three of the larger trucks are assigned to our warehouse for use in blank-paper shipments, shipments to commercial printing contractors, and for postal-card and money-order consignments to the Post Office Department. One is kept in continuous service between the

Office and our public storage warehouses. The Patent Office work requires almost full-time service from another. Two trucks are scheduled for frequent trips daily to the Capitol, Senate and House Office Buildings, and the Library of Congress. During sessions of Congress, the trucks regularly assigned to congressional delivery or pick-up are often inadequate and must be supplemented with additional equipment or extra hours of operation.

Local delivery of the Congressional Record necessitates third-shift operation of four light trucks, which are kept available for starting their routes at any hour designated by the Superintendent of our Bindery.

The second shift consists of a small force which is able to make deliveries to some agencies and thereby relieve congestion on the platforms. This shift also loads and unloads large trucks, thus making the equipment ready for movement on the following day.

The turn-over of personnel during the war years has been out of all proportion to the number of employees, because drivers and helpers usually fall into the age group subject to military service and also because every type of business had openings for men of their training and background. This turn-over has slowed down recently but has not yet been reduced to normal. Personnel on all shifts totals 102, with 2 vacancies.

Activities of the Section are seriously hampered by conditions existing at department reception platforms and offices. Our drivers and helpers are slowed down by being forced to unload by hand where there are no platforms. Where platforms exist, they are of different heights and often so congested that a truck must wait its turn. Our drivers have to contend with steep ramps and entrances that limit load heights. They must secure receipts for every delivery, and thus they lose valuable time in locating representatives authorized to sign them.

PART IV

Service Divisions

FIELD SERVICE DIVISION

The Field Service Division was created by Administrative Order 40, dated July 1, 1946, and issued by the Public Printer for the purpose of prescribing the functions of the duplicating and distribution plants transferred on that date to the Government Printing Office. The order also created the position of Field Service Manager. This report gives the background of the transfer of the plants, describes the acquisition of the State Department printing plant, and provides an account of their operation during the fiscal year 1947.

BACKGROUND OF TRANSFER

On March 19, 1946, the Director of the Bureau of the Budget transmitted the following letter to the Public Printer regarding the continued operation of Treasury Department duplicating and distribution plants located in Washington, D. C., Boston, New York, Philadelphia, Atlanta, Cleveland, Cincinnati, Chicago, Kansas City, Mo., Dallas, Fort Worth, Denver, Los Angeles, San Francisco, and Seattle:

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., March 19, 1946.

MY DEAR MR. GIEGENGACK: The Bureau of the Budget has just completed a study of the management and operations of the Treasury Department, Procurement Division, Duplicating and Distribution Branch, and, based upon the findings,

has reached a decision that the operations of the duplicating plants presently conducted by this Branch should be placed under the supervision and direction of the Government Printing Office, effective July 1, 1946.

Briefly, the history of these plants is as follows: The National War Agencies Appropriation Act, 1944, approved July 12, 1943 (57 Stat. 528), under the heading "Executive Office of the President, Office for Emergency Management, Division of Central Administrative Services," made available \$750,000 without fiscal year limitation for maintenance and operation of central duplicating and photographing services in the District of Columbia and elsewhere for the constituent agencies of the Office for Emergency Management and for the Office of Price Administration. The act further provided that the costs thereof, consisting of charges for personal services, materials, equipment (including maintenance, repairs, and depreciation), and other expenses, should be reimbursed from applicable funds of the agencies for which such services are performed.

Executive Order No. 9471, issued August 25, 1944, pursuant to provisions relating to the Division of Central Administrative Services contained in the National War Agencies Appropriation Act, 1945, approved June 28, 1944 (Public Law 372, 78th Cong.), directed the termination of Central Administrative Services and provided for the discontinuance or transfer of its functions to the constituent agencies of the Office for Emergency Management and other appropriate Federal agencies, as should be administratively determined by the Director of the Bureau of the Budget. Pursuant to this order, the Director of the Bureau of the Budget on September 26, 1944, ordered the transfer of the duplicating services financed from the Working Capital Fund, Division of Central Administrative Services, Office for Emergency Management, together with the fund and all the assets and liabilities related thereto, to the Procurement Division, Treasury Department, effective at the close of business on September 30, 1944.

On January 18, 1946, the Secretary of the Treasury directed a letter to me outlining plans for orderly liquidation of these plants and asked for my comments and suggestions. Accordingly, a survey was made of the operation and management of these plants and the services rendered to Government agencies. Representatives of the Government Printing Office furnished technical advice and assistance in the survey. The findings of the survey definitely show a need for these services. Therefore, I have advised the Secretary of the Treasury that effective July 1, 1946, the functions of the Duplicating and Distribution Branch, Procurement Division, Treasury Department, should be transferred to the Government Printing Office. In this communication I have informed the Secretary of the Treasury that no other formal instrument of transfer is necessary since adequate legal authority exists for the Government Printing Office to assume responsibility for operating these plants under 44 United States Code, pages 60 and 61.

It is my understanding that the Government Printing Office will continue the operation of these plants in Washington, Boston, New York, Philadelphia, Atlanta, Cleveland, Cincinnati, Chicago, Kansas City, Dallas, Fort Worth, Denver, Los Angeles, San Francisco, and Seattle to fulfill the duplicating and distribution requirements of the present customer agencies. It is further assumed that you will finance the operation of these plants through the Working Capital and Congressional Printing and Binding Fund presently at your disposal. Accordingly, the present working capital fund of \$750,000 for operating these plants in the Treasury Department will be returned to the Treasurer of the United States by the Procurement Division as of June 30, 1946. In addition, all accretions to the fund during its operation by the Procurement Division will be deposited to Miscellaneous Receipts of the Treasury. The Treasury Department will liquidate

all accounts receivable, accounts payable, and liability, contingent, and valuation reserves as of the termination date.

It has been indicated that the Government Printing Office will continue the operation of these plants with no interruption in service and that the present method of reimbursement for services rendered will be continued on the present basis, i. e., chargeable to the customer agencies under classification 07—Other contractual services. It has been generally agreed in discussions between the staff of the Bureau and the Government Printing Office that in undertaking operation and management of these plants you will take over all personnel at present salary grades, equipment, supplies, and assume liability for leases and contracts presently in force.

It is particularly important under this new operation that the Government Printing Office fully observe agency administrative discretion as to the necessity for duplicating and distribution and in quantities required. The method of printing or processing, whether in the plants or by other commercial services, is to be a determination of the Government Printing Office, subject only to assuring satisfactory and suitable end products for agency administrative requirements.

Until such time as the Government Printing Office has been able to effectuate adjustments necessary to improve the operating efficiency and economy of the services performed, the existing prices, quality, and timeliness of the services should be continued.

I shall appreciate an early reply stating your position in regard to the transfer and the conditions set forth relating to this transfer of the plants, personnel, and equipment, and the performance of services. I assure you of the full support and cooperation of the Bureau of the Budget in the effective accomplishment of this transfer.

Very truly yours,

HAROLD D. SMITH, *Director.*

On March 21, 1946, the Public Printer replied to the Director of the Bureau of the Budget, agreeing to undertake the operation of the plants under the conditions and for the reasons therein outlined.

On May 27, 1946, the following bulletin was issued by the Bureau of the Budget in connection with the transfer:

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., May 27, 1946.

Bulletin No. 1945-46: 22.

To the Heads of Executive Departments and Establishments.

Subject: Transfer of Duplicating and Distribution Branch of the Procurement Division, Treasury Department, to the Government Printing Office.

Effective July 1, 1946, the Government Printing Office is assuming responsibility for the operation of facilities of the Duplicating and Distribution Branch of the Procurement Division, Treasury Department, with plants located in Boston, New York, Philadelphia, Atlanta, Cleveland, Cincinnati, Chicago, Fort Worth, Dallas, Kansas City, Denver, San Francisco, Los Angeles, Seattle, and Washington, D. C.

As the operator of these plants, the Government Printing Office will continue to provide duplicating and distribution service to the constituent agencies of the

Office for Emergency Management, the Office of Price Administration, and such other agencies as are now served by the facilities operated by the Treasury Procurement Division. Additional agencies may avail themselves of these duplicating and distribution services in the above-named localities.

Before proceeding with the installation of extensive duplicating and distribution facilities or the expansion of existing facilities, departments and establishments with offices in the above localities should determine whether satisfactory and timely service can be secured from these plants.

Agencies securing duplicating and distribution service from the Government Printing Office after July 1, 1946, will be charged for work performed on the basis of Treasury Procurement Division price lists in effect on June 30, 1946, until subsequent changes in methods of cost accounting or types of service rendered may support price modifications.

The Government Printing Office will continue to bill agencies for duplicating and distribution services on Standard Form No. 1080 (Voucher for Transfer Between Appropriations and/or Funds), chargeable by the debtor agency to object classification 07—Other contractual services.

HAROLD D. SMITH, *Director*.

OPERATIONAL ORGANIZATION

A circular letter was transmitted to the managers of each of the Treasury Department, Procurement Division, duplicating and distribution plants, on June 24, 1946. This letter referred to Budget Bulletin 1945-46: 22 and advised the plant managers as to operational procedure to be followed after July 1, 1946, to effect integration of the field plants with the Government Printing Office. Subsequently, the plant employees were addressed by our executive officer, who made a tour of the plants to outline their operational duties and to explain the responsibilities and authority of the Government Printing Office.

An inspection of all these plants was made by our consultant on methods and procedures, our principal rate investigator, and our field service manager. It was generally observed that customer agencies were receiving timely service and that a high morale existed in most plants. The investigators found that many plants were located in office space inadequate or unsatisfactory for efficient operation.

During this tour of inspection, regional and district Treasury Procurement managers who were contacted offered to assist the Government Printing Office field-office managers in order to facilitate the orderly transfer of activity. In those cities where plants were occupying inadequate or unsatisfactory space, the assistance of Public Buildings Administration officials was solicited. As a result of these efforts, the field offices in New York, Kansas City, Atlanta, and Dallas have been relocated to attain appropriate operational space. Attempts to relocate some of the other plants are still being made.

The managers of all Government Printing Office field offices were

called to Washington on October 7 for a meeting to familiarize them with operations of the Government Printing Office. They were addressed by various officials of the Office, who discussed procedure and answered questions. Field Service Regulation No. 9, governing purchasing procedure, was issued and discussed during this meeting.

A proposed accounting manual was also discussed during the meeting. This manual has since been issued by our Comptroller to be effective July 1, 1947. It will provide a basis for the maintenance of uniform accounting procedure and should prove of great value.

A statement of operational plans and objectives to be achieved by field offices, emphasizing economy of operation and timeliness of service, was presented during this meeting. Relative costs of production of work by offset in field offices, Government Printing Office central office, and commercially under standard-rate agreements were discussed. It was emphasized that the continuance of operation of field offices depended on their ability to produce work as promptly and economically as might be obtained elsewhere. The last day of this meeting was devoted to a general discussion of common problems.

A survey of commercial facilities in several field-office cities for the production of War Assets Administration work was conducted by representatives of the central office in February 1947. Through their efforts interest in the acceptance of work to be produced at prices covered by standard-rate agreements was stimulated. Printers in Los Angeles displayed less interest in the acceptance of such standard-rate-agreement work than in any other city surveyed. Cleveland's available commercial facilities were found to be sufficiently extensive to justify reduction in the size of the Cleveland field-service office by the elimination of the night shift. The survey resulted in the diversion of many-page, large-quantity jobs to commercial sources.

A survey of available facilities and needed services determined that the areas served by the Fort Worth and Dallas offices could be adequately and efficiently accommodated by a single plant at Dallas. On July 31, 1946, the Fort Worth office was consolidated with that of Dallas.

At the close of the fiscal year there was a total of 865 employees in all field offices as compared with 975 on June 30, 1947. A Patent Reprint Section, requiring 80 employees, was established in the Washington field-service office in September 1946. The number of employees in this field office on July 1, 1946, was 304 as against 319 on June 30, 1947, including the Patent Reprint Section. Reduction-in-force procedure now being applied is expected to decrease the staff to approximately 240. There have been slight personnel reductions in other plants where the volume has declined.

PATENT REPRINT PROGRAM

Late in 1945 the Commissioner of Patents placed before the Government Printing Office his problem of reprinting a large number of patents. The commercial firm which held the contract for reprinting patents had accumulated such a backlog of work that approximately 3 months were required to obtain reprints. This contractor was unwilling to enlarge his facilities so as to increase daily capacity above 1,200 pages unless a 4- or 5-year contract could be assured. Such assurance could not be given by the Patent Office.

The Government Printing Office obtained bids from commercial plants for the performance of this work. New York prices ranged from \$1.55 to \$2.22 and Washington prices from \$1.47 to \$1.53 a page for printing 50 copies. These prices were determined to be excessive, so we decided to accomplish this work with the facilities of the Government Printing Office. After careful consideration of production methods, it was decided to utilize part of the capacity of the Washington field-service office.

After the Patent Reprint Section had been in production for 3 months, the Patent Office reported that for the first time in several years the public could be supplied copies of patents without delay. The production of this unit has steadily increased and a maximum of 2,634 pages per day was attained on May 15, 1947.

The present charge is approximately 90 cents per page. More than 238,000 pages have been reprinted by this unit since operation began in September 1946.

SURPLUS EQUIPMENT ACQUIRED

In accordance with the United States Code (title 44, sec. 59), Government departments and agencies having possession of printing and binding equipment and supplies surplus to their needs are required to offer such equipment and materials to the Public Printer before disposing of them. In this manner much needed equipment has been acquired for use in our field offices, resulting in minimum procurement of new equipment. Among the items acquired from surplus were 6 Webendorfer offset rotary presses, each capable of producing per hour 15,000 sheets, 8½ by 11 inches, printed both sides. Offset presses, size 17 by 22 inches, are needed for some plants, but acquisition of new equipment has been deferred until the results of the survey of departmental printing and duplicating activity have been fully considered. A large quantity of new printing equipment originally procured for use overseas by the Office of War Information was discovered in a San

San Francisco warehouse. Many items of this equipment are now in use in the Government Printing Office at Washington and in its field offices.

Reductions in production costs have resulted in part from the productive capacity of the six Webendorfer presses just mentioned. Price schedules have been revised to bring charges in line with costs.

THE YEAR'S PRODUCTION

During the fiscal year our field offices completed 84,764 jobs consisting of reproduction, photographic, and distribution services for more than 50 Government departments and agencies.

A job of outstanding importance was accomplished for the Veterans' Administration. It required, on short notice, approximately 1,750,000 copies of an insurance-inventory form to be distributed in several cities. Copy was received in Washington late Tuesday night and delivery of completed forms was effected in nine locations by close of business the following Friday. The Veterans' Administration field staffs were required to take this inventory over the week end. By having the forms when needed, the Administration saved valuable working time. In Boston alone, according to the regional director, the savings resulting from this timely service amounted to over \$10,000.

The following tabulation gives the number of jobs completed by the field offices, the agencies served, and charges rendered during the fiscal year 1947:

Office	Number of agencies	Number of jobs	Charges rendered
Boston, Mass.....	21	5,527	\$333,948.09
New York, N. Y.....	22	7,619	333,526.73
Philadelphia, Pa.....	19	2,856	71,209.56
Washington, D. C.....	37	25,688	1,292,402.45
Atlanta, Ga.....	21	1,086	102,874.14
Cincinnati, Ohio.....	9	2,893	286,188.60
Cleveland, Ohio.....	22	4,316	363,502.08
Chicago, Ill.....	30	6,387	317,590.78
Kansas City, Mo.....	20	4,075	363,117.29
Dallas, Tex.....	21	4,645	155,074.48
Denver, Colo.....	24	4,727	255,299.35
Seattle, Wash.....	22	5,141	329,082.94
San Francisco, Calif.....	22	6,048	562,166.82
Los Angeles, Calif.....	19	3,756	522,061.11
Total.....		84,764	5,288,044.42

The largest customer of our field offices is the War Assets Administration. The expeditious handling and mailing of its advertising cata-

logs, on extremely tight schedules, greatly implemented its surplus-disposal program. There were hundreds of instances in which the Administration's program would have been seriously hampered had our field offices not been able to produce these and other jobs.

Acquisition of other than essential equipment and increased space for most field offices has been deferred because of the temporary nature of most work currently handled and the status of the field printing and duplicating survey (see p. 10) which may result in elimination or consolidation of many plants when recommendations are effectuated. The War Assets Administration has been requested to furnish an estimate of the volume of work required during the next 6 months. The Government Printing Office will ascertain to what extent this production may be accomplished without sacrifice of service by commercial contractors in those cities where field offices are located. It is planned to adjust the size of our field offices so that they may handle a minimum of uneconomical production.

GPO-STATE DEPARTMENT SERVICE OFFICES

In November 1946 the field-service manager assisted a representative of the Bureau of the Budget in surveying a printing plant and a duplicating plant operated by the Department of State.

As a result of the survey, the Bureau of the Budget decided that the duplicating plant should be continued in operation by the Department of State and that more complete utilization of the equipment of the printing plant could be obtained if operated by the Government Printing Office. Consequently, on November 27, 1946, an agreement for the transfer and operation was signed.

The actual transfer was made on February 1, 1947. Employees involved in this transfer were addressed by our executive officer, who outlined the mission and function of the Government Printing Office and welcomed them into the organization. Adjustments in the pay of most employees have been made so as to conform to wage levels established in the Government Printing Office for similar kinds of work.

Mechanical maintenance and other facilities of the Government Printing Office have greatly assisted in the efficient operation of this plant. It, in turn, has helped in the production of many Government Printing Office jobs.

Filler work involving personal services amounting to \$10,521.04 was produced for the Government Printing Office during the 5-month period of operation, without reduction of the service for which the plant was originally established. It is obvious, therefore, that more

complete utilization of personnel and facilities has been achieved as a result of transfer of this activity to the Government Printing Office. Several letters of commendation have been received from State Department section chiefs in appreciation of services rendered.

DIVISION OF TESTS AND TECHNICAL CONTROL

The principal functions of the Division of Tests and Technical Control are: (1) Testing all materials and supplies purchased by this Office for public printing and binding; (2) conducting general research experiments to develop new methods or materials and utilization of materials; (3) carrying on research in connection with specific problems encountered by the planning and production divisions; (4) manufacture of glues, adhesives, inks, printing rollers, solutions, etc.; and (5) remelting and standardization of metal used for type and plates. A total personnel of 57—consisting of chemists, laboratory assistants, clerical staff, and production employees—are engaged in the work of the Division.

PAPER TESTING

The paper received by the Government Printing Office, including paper stored in public warehouses and leased space, paper shipped directly from mills to commercial printers, and paper from surplus property, totaled 187,495,472 pounds, as compared with 90,725,830 pounds for a prewar year (1939). This is an increase of 96,769,642 pounds, or 106.8 percent.

In testing 4,497 deliveries of paper and envelopes during the year, 67 deliveries were found not to conform to specifications. The deficiencies in specified quality and the quantities involved are given in the following tabulation:

Deficient in—	Number of deliveries	Pounds
Bursting strength.....	7	305,392
Folding endurance.....	17	436,325
pH value.....	2	6,280
Thickness.....	2	16,250
Opacity.....	19	561,416
Not within weight tolerance.....	1	59,044
Unsatisfactory general appearance.....	13	487,863
Unsatisfactory finish.....	6	225,261
Total.....	67	2,097,831

PAPER SPECIFICATIONS CHANGED

A number of changes in the specifications were made in our paper schedule during the year.

Watermark instructions were revised to permit substance 88, rag-content paper, to be delivered unwatermarked. The maximum unbleached chemical wood and ground wood pulp content of offset book paper was reduced from 25 to 10 percent. The term "machine" in the designation "machine-coated book," covering lots 37 to 39, inclusive, has been deleted, and the specifications were modified to obtain paper of a quality suitable for high-speed web-press printing. This class of paper is now designated as "coated book" instead of "machine-coated book." The stock requirement of coated book paper, lot 40, was revised to read "free from unbleached or ground wood pulp." Ground wood pulp is, therefore, not permitted in the base stock of this grade of coated book paper.

The wax-test requirement for litho-coated book paper was raised from 5A to 6A Dennison wax. The finish or smoothness requirement of dull-coated book paper was reduced from 400 to 300 seconds.

Specifications were written for postal-card stock and included in our paper schedule for the purpose of procuring a grade of card stock suitable for printing forms other than postal cards.

A change in fiber content of the facing sheets of railroad board permits a maximum ground-wood-pulp content of 25 instead of 10 percent. Rolls of cardboard are now specified to be delivered on 3-inch fiber cores. Postal-card stock also may be delivered on either 6-inch iron or 6-inch fiber cores. The moisture-content requirement of 4 percent for this grade of paper was revised in order to permit it to be in equilibrium with 50 percent plus or minus 5 percent relative humidity. Specifications were written for 25-percent rag lithograph finish map and included in our schedule for the first time.

At the request of our Field Service Manager, specifications were drawn for offset newsprint to provide our field offices with low-cost paper satisfactory for use in printing by the offset and multilith processes. The paper thus specified was purchased and is now being used for printing catalogs of war surplus materials offered for sale by the War Assets Administration.

The introduction by the Post Office Department of the 10-cent foreign-air-mail combined letter and envelope required the use of a specially designed chemical wood writing paper of maximum opacity. Under the specifications the contractor is required to print on both sides of the sheet a visible light blue consisting of the phrase "United States foreign air mail," the words appearing at right angles to each

other when viewed by transmitted light. The phrase is separated by a star between repetitions, and the words are staggered on successive lines of printing. This design is intended to give sufficient opacity to the paper not to allow the writing to show through. The color of the design is not permitted to interfere with the legibility of the writing.

Tests have been made on numerous samples of blotting and tissue paper required in the process of laminating valuable documents. As a result of these tests, we have been able to prepare suitable specifications for ordering this material.

The over-all dimensions of loaded skids were revised to require that they shall not exceed 46 inches in width, 70 inches in length, and 60 inches in height.

ENVELOPES

The number of envelopes received during the fiscal year, including those from surplus property, totaled 84,076,977, as compared with 65,433,571 received during the fiscal year 1939. Tests showed 1 delivery of 35,750 envelopes to be deficient in bursting strength.

Only two changes were made during the year in envelope specifications. The stock requirement of chemical wood writing envelopes was revised to permit unbleached chemical wood pulp not to exceed 60 percent, ground wood pulp not to exceed 25 percent, and the bursting-strength requirement of 100-percent white bond envelopes was reduced from 85 to 72 points.

TECHNICAL CONTROL OF MATERIALS

The total number of samples, including paper and envelopes, tested by the Division during the fiscal year was 7,186. The various materials tested are as follows:

Paper and envelopes.....	4, 497
Textiles.....	486
Bookbinding leathers.....	43
Metals.....	876
Adhesive-making materials.....	47
Adhesives.....	103
Ink-making materials.....	153
Inks.....	78
Oils and greases.....	65
Gasoline.....	90
Chemicals.....	611
Miscellaneous.....	137
Total.....	7, 186

INK AND MISCELLANEOUS MATERIALS

Printing inks, including mimeograph, stamp-pad, and numbering-machine inks, in the amount of 353,966 pounds were manufactured by the Division during the year, as well as the following miscellaneous products:

Blue toner.....	pounds..	31, 550
Electrotype backing fluid.....	quarts..	200
Ruling inks.....	do.....	2, 444
Writing inks (all colors).....	do.....	19, 315
Check signature ink.....	pounds..	1, 725
Special ink solvents.....	quarts..	3, 080
Aluminum hydrate base.....	pounds..	55
Permanent peacock-blue base.....	do.....	100
Multifex white base.....	do.....	212
Splicing compound.....	do.....	450
Special varnish.....	do.....	1, 250
Ink retarder.....	quarts..	64
Penetrating oil.....	do.....	80
Stereo releasing fluid.....	do.....	40
Wash for offset rollers.....	do.....	600

The Division also produced or procured for, and furnished to, other Government departments and agencies the following materials:

Mimeograph ink, black.....	pounds..	94, 364
Printing ink, black and colored, including multigraph.....	do.....	9, 721
Writing inks, all colors.....	quarts..	10, 174
Stamp-pad and numbering-machine inks.....	pounds..	6, 366
Check-signature inks.....	do.....	2, 367
Check-endorser ink.....	do.....	321
Postage-meter ink.....	do.....	202
Laundry-marking ink.....	do.....	58
Instrument-recording ink.....	½-ounce bottles..	192
Special ink solvent.....	quarts..	464
Molded glue, including stamp-canceling composition.....	pounds..	2, 304
Roller composition.....	do.....	979
Press rollers.....	do.....	417
Paste.....	do.....	4, 890
Green padding compound.....	do.....	415
Dextrin-gum solution.....	quarts..	966
Mucilage.....	do.....	48
Vynylite.....	do.....	25

TYPE METAL

Type metal standardized during the fiscal year totaled 12,146,275 pounds, which was 158,286 pounds, or 1.32 percent, more than the preceding year.

In the correction of metals to standard formulas, the following quantities of correction metal were used:

	Linotype	Monotype	Stereotype	Electrotype
	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
Returned for remelting.....	6, 448, 397	3, 058, 646	1, 408, 308	1, 001, 448
Correction metal used:				
Lead-antimony alloy.....	3, 369		90	45
Tin-antimony alloy.....		59, 515	1, 139	
Antimony.....		40	75	
Tin.....		23		
Lead.....	134, 006		4, 894	19, 195
10-percent electro.....				7, 085
Total.....	137, 375	59, 578	6, 198	26, 325
Total corrected metals.....	6, 585, 772	3, 118, 224	¹ 1, 414, 506	1, 027, 773
Dross ²	71, 287	60, 280	15, 540	15, 229
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Increase due to correction.....	2. 09	1. 91	0. 44	2. 56
Loss due to dross.....	1. 08	1. 93	1. 10	1. 48

¹ Includes 324,080 pounds of solid-body material not standardized to stereotype formula but varying only slightly from it.

² Not included in totals.

During the year, 81,450 pounds of lead were purchased without trade-in. In addition, 111,460 pounds of lead, 28,468 pounds of lead-antimony alloy, and 43,455 pounds of tin-antimony alloy were purchased with the following scrap materials tendered in part payment: 20,727 pounds linotype dross, 24,207 pounds monotype dross, 4,242 pounds electrotype dross, 4,688 pounds stereotype dross, and 308,500 pounds unserviceable electrotype plates.

PRESS ROLLERS, BINDERY GLUES, AND MISCELLANEOUS ADHESIVES

Press rollers manufactured during the year required 36,978 pounds of composition and totaled 4,434 in number, as compared with 29,198 pounds of composition required for 5,725 press rollers in 1939. Used-roller composition was salvaged and reused to the extent of 21,686 pounds. Of the number of rollers manufactured, 432 were mechanically coated upon specially prepared synthetic-rubber bases by a process in which the base is rotated while the hot composition is being deposited upon it. For mechanically coated rollers, 1,184 pounds of process glue composition of our own manufacture was used. Thirty-two additional roller bases, for coating by this process, were purchased during the year.

The manufacture of molded glue during the year totaled 136,174 pounds as compared with 122,699 pounds in 1939. In addition, the following bindery adhesives were manufactured for use in the Office:

	<i>Pounds</i>
Cold padding compound.....	22, 223
Seal-Tite sealing paste.....	25, 301
Water-resistant sealing paste.....	7, 768
Waterproofing solution.....	24, 575
Dextrin gum for air-mail letters.....	4, 200

A grand total of 220,241 pounds of molded glue and other bindery adhesives was manufactured.

Two new roller-casting machines were purchased to replace machines that had been in use for more than 40 years. One gun, containing six 4-inch- and four 4½-inch-diameter molds, was delivered in December 1946. The other gun, still to be delivered, will have 26 molds—six 3¼-inch-, twelve 2½-inch-, and eight 2-inch-diameter molds.

RESEARCH DEVELOPMENTS

Detergents for the Printer

Because of the many inquiries received by the Government Printing Office relative to the removal of ink and grease from printing surfaces, and because of the recognized fire and toxicity hazards inherent in the extensive use of solvents for this purpose, we initiated an investigation designed to develop new and improved ink solvents and to classify them, together with the known solvents, for the benefit of this Office and the printing industry in general.

The results of the investigation, supplementing and expanding earlier reports, are reported in a technical bulletin, which has been reviewed and approved by Printing Industry of America, Inc. The bulletin lists and describes all commonly used ink solvents, gives formulas for the substitutes developed in the course of the experiments, and tabulates the drying rate, solvent power, inflammability, and toxicity of each. It has been printed for use in the Government Printing Office and for public sale by our Superintendent of Documents. The industry reviewers are of the opinion that the bulletin will serve to reduce fire, explosion, and toxicity hazards in printing plants throughout the United States.

Alkaline Writing Inks

A research project was initiated in 1946 to develop a permanent, iron-base writing ink which would eliminate the recognized deficiencies of writing inks normally used where permanence is required.

This research was successfully concluded in the development of a process for making ink from a deeply colored, slightly alkaline, iron compound. This compound had been isolated and described by two Rumanian chemists in 1908, but no practical and economical method of producing it in stable solution had been devised despite tests by the National Bureau of Standards and others. In order to protect the Government from possible royalty claims of later researchers, action to file a patent application has been started. Extensive and successful experiments also were made on compatible dyes for use with the compound, as well as on material to give the most desirable flow characteristics.

Through this research, it has been possible for us to manufacture 5,000 gallons of a stable and almost neutral writing ink containing a high iron content for permanent-record, fountain-pen, and general office use, which shows very good flow characteristics, freedom from sedimentation, and tendency to crust in open wells, very slight corrosion on steel pens and none on desk-set pens, fast-drying rate, and no tendency to clog fountain pens.

Printing and Drawing Inks for Cellulose Acetate

Experimental work is being conducted, in cooperation with our Composing Division, for the production of proofs on cellulose acetate. Such proofs can be used in place of film positives to eliminate camera work and several other steps in preparing offset printing plates. Difficulties have been encountered in obtaining a suitable printing ink for use on the transparent cellulose-acetate sheets employed in this process. Several commercial inks were tried with indifferent success. One of these distributed badly on the rollers and gummed up; the second dried in about 20 minutes and required a press wash-up every 40 minutes; the third required a press wash-up only once every 2 hours, but took 2 hours to dry when hung on a line and overnight to dry when laid flat on newsprint.

Because of these difficulties, our Superintendent of Composition requested that we provide, if possible, a printing ink which would accomplish the purpose more effectively.

Inasmuch as we were at the time engaged in research, at the unrelated requests of the National Bureau of Standards and the United States Geological Survey, to develop a quick-setting printing ink and a drawing ink for use on cellulose-acetate film or sheeting, it was decided to combine the work on these requests because of their similarity.

Ordinary printing inks which dry on paper by a combination of penetration, oxidation, and polymerization are unsatisfactory for print-

ing on plastics. Since there is no penetration or absorption of the ink by the plastic and since the oxidizing and polymerizing processes are relatively slow, characters printed on each cellulose-acetate sheet will offset on the next sheet delivered by the press. Even though a special quick-drying ink is used, the printing may be rubbed off by friction, since it lies only on the surface of the sheeting.

To make the printing "rubproof," it was necessary to insure penetration of the ink into the cellulose acetate. Theoretically, this can be accomplished by the use of any one of a number of solvents. However, these solvents are either so volatile that they dry almost immediately on the press rollers and plate, as well as on the ink mill during grinding of the pigment, or they penetrate the cellulose acetate so slowly that they offset and smudge badly.

Through the use of a relatively new chemical compound, a printing-ink formula, which permits grinding on a three-roll ink mill, was developed; and, with reasonable care, the ink can be run without drying on the press. It adheres firmly to cellulose acetate and dries immediately.

The new compound also can be used with oil- or water-soluble dyes to make a suitable drawing ink. Such an ink flows smoothly from drawing pens and dries as quickly on cellulose acetate as ordinary drawing ink does on paper. However, because of the low vapor pressure of the compound, the ink will not dry or clog in the pens.

Both the National Bureau of Standards and the United States Geological Survey have expressed complete satisfaction with the working qualities of these inks, and the investigation is being continued to determine the suitability of this kind of ink for printing on cellulose-acetate film.

Synthetic Varnishes for Offset Inks

Printing inks used in the offset process have a tendency to emulsify or mix with the fountain solutions while printing and to hold them in a permanent suspension in the ink. This degrades the blackness of the ink and causes it to appear gray when printed. It also increases the length of time required for the ink to dry.

The addition of a synthetic phenolic varnish up to 20 percent of the vehicle content produces a water-resistant ink for offset printing with improved working qualities and with but little tendency to emulsify with fountain solutions. Phenolic-resin varnishes from several sources of manufacture produced inks of equal quality in this respect. At present two phenolic varnishes of different viscosities are mixed and employed in varying proportions for adjusting offset inks.

Oil of Sassafras in Addressograph Ink

Standard formulas for blue stencil ink include natural oil of sassafras as one of the ingredients. When natural oil became unobtainable during World War II, we investigated the use of several substitutes. The first substitute utilized was "Sassene A," but ink made with this oil proved unsatisfactory. The stencils filled up with gummy substances and did not produce clear impressions upon the paper. In studying the physical properties of Sassene A, it was found that the oil, because of surface tension and capillary attraction, rises upon the sides of the ink fountain and finally creeps out of the fountain, leaving the pigment behind. This characteristic was imparted to the stencil ink in which that oil was used. Only moderate success attended our efforts; and now that natural oil of sassafras has again become available, its use in the manufacture of stencil ink, based upon the original formula, has been resumed.

Chalking of Bronze-Blue Inks

On several occasions our Ink Section has been called upon to remedy the chalking and nondrying of bronze-blue ink when printed upon coated paper. Nondrying and chalking on coated paper seldom occurs when bronze-blue printing ink is used because the bronze-blue pigment is itself a natural drier for printing inks.

On the rare occasions when chalking occurred, the ink did not dry on the printed sheets when stacked; but when separate sheets were exposed to the air, the ink dried readily. However, the problem of determining the cause of chalking and nondrying remained. In each such instance, examination of the paper revealed that it was so absorbent that it tended to separate the ink vehicle from the pigment particles, leaving them upon the paper surface in an unbonded state. When increased quantities of drier were added to the ink at the press, very little improvement in drying upon the paper occurred, although the ink began to show signs of drying on the press during the printing operation.

Several experimental inks were formulated in our laboratory and tested on a proof press. It was found that the addition of 2 percent of No. 2 lithographic varnish definitely assisted the drying of the ink. Further study to eliminate chalking resulted in omitting wool grease and No. 00 varnish from the ink formula. The addition of 5 percent of a synthetic phenolic varnish to the ink inhibited chalking, but picking developed. The picking was then overcome by the addition of a small quantity of boiled linseed oil to reduce the body.

Revision of Engraved Map Plates

The periodical revision of Geological Survey maps frequently requires corrections which involve deletions and additions to the original engraved copper plate.

An average original engraved map plate requires many hours of a skilled engraver's time. The necessary corrections are customarily made by restoring the original surface by an operation known as punching up. It was thought that this procedure might be improved by an electrodepositing method.

At the request of the Geological Survey, and with the cooperation of our Platemaking Division, experiments were made in electrodepositing copper in the "excised" or routed-out areas of a sample engraved map plate. This involved controlling the depositing conditions to insure proper density, hardness, thorough adhesion, and a smooth continuous joint.

The ordinary depth of the engraved lines seldom exceeds 0.006 inch. Therefore the areas to be replaced were routed to approximately 0.010-inch depth. By carefully coating the area where deposition was not wanted with electrotyper's wax and by using a low-current density of 6 to 8 amperes per square foot at 1 volt in an unagitated acid copper electrotype solution, satisfactory results were obtained in depositing copper in these excised areas. To remove any roughness at the edges, the deposit was examined at intervals. Deposition then was continued until the copper was a few thousandths of an inch thicker than the surrounding area of the engraved plate, in order to permit the engraver to scrape and burnish the deposited areas and establish a continuous plane with the unaltered plate surface.

The desired changes were then made by the engraver to produce a satisfactory revised map plate. Several live plates were treated in this manner with gratifying results.

Some experiments were also made to restore the entire original copper engraved plate by electrodeposition. This was accomplished, but the method was not used on entire plates because engravers reported that the copper-deposited reproductions did not possess the desired hardness properties for a full-sized plate.

Magnesium for Bookbinder's Dies

When engraver's brass became difficult to obtain, some experiments were made by us with a magnesium sheet, known to the trade as Zomag, as a substitute in the production of bookbinder's dies.

This magnesium material etched very nicely and more quickly than

brass. Stampings from magnesium dies were made on ruby buckram covers with imitation gold at the usual temperature of 275° F. The dies wore out more rapidly than brass dies but were considered to be better than electrotypes for the job. After 6,000 stampings the magnesium dies were unsatisfactory, whereas the condition of brass dies remained practically unchanged.

Miscellaneous Bookbinding Adhesives

During the year a total of 40 adhesive formulas were developed or perfected in our laboratory for bookbinding and other uses. Many of these have been adopted for regular production work. Several problems also were solved for other Government agencies seeking our assistance on adhesives.

Resinous Adhesives

Wartime restrictions in the use of animal glue for the production of binding adhesives, as well as current persisting shortages of glue, have necessitated research into the use of resinous and plastic substitutes.

This investigation led to the development of resinous adhesive formulas, employing as the principal constituent a water emulsion of polyvinyl-acetate resin. This compound, manufactured commercially as a heavy milky-white emulsion similar in consistency to liquid glue, exhibits excellent adhesive qualities, drying out into a hard but brittle film. In view of its brittle nature when dry, it proved unsuitable in its manufactured form as a substitute for the flexible-glue compounds employed for bookbinding operations, such as gluing-off, lining-up, gathering, covering, and padding work.

Experiments revealed that the addition of a softening agent or plasticizer to the emulsion, in an amount equivalent to 8 percent of the total weight of the emulsion, produced dry resinous films permanently flexible and ideally suited for padding and notebook work. It was also observed in the course of this research that the polyvinyl-acetate emulsion increased its viscosity or thickened slightly when the plasticizing agent was added to it. The thick compound did not brush on readily during padding operations, and more time was consumed in working with this mixture than with a thinned-out padding mixture.

Small amounts of water were accordingly added to the plasticized polyvinyl-acetate emulsion in order to thin out the mixture sufficiently

for easy application by the bookbinder. A viscosity range between five and seven poises was found to be best for padding work.

A number of experiments were conducted, using various chemical plasticizers, in arriving at the present formulas, but only a few of these were found suitable in properties and cost for use as softening agents. The results of the tests, with proved formulas, are included in bulletins prepared in this Division, reviewed and approved by the research committee of Printing Industry of America, Inc., and printed for Office use and public sale through the Superintendent of Documents.

Other Adhesives

During the year a number of adhesives other than the resinous types were also developed or perfected for various uses throughout the Office. Problems of many kinds are continually developing in our Binding Division in connection with requirements for manufacture of adhesives having special properties. The research papers listed elsewhere in this report (p. 205) include several studies and tests on adhesives.

Laminating of Documents

Work was started this year on the development of a production-line process for laminating documents, such as foreign patents and other printed matter, with cellulose-acetate sheeting. This process will differ from the slower laminating method now in use in our Library of Congress Branch or at National Archives in that it is intended to make possible the rapid and economical preservation of many manuscripts or printed matter. Such processing would be prohibitive in cost if done by slower methods.

It consists essentially of two webs of cellulose-acetate sheeting, having an approximate thickness of 0.0015 inch, a suitable adhesive with means for applying it to the inside surfaces of the sheeting, and attachments for continuous feeding of the manuscript sheets between the two webs and finally passing them through pressure rollers.

Experimental work has been in progress on the problem of developing a suitable "cold pressure" adhesive for this operation, and some promising results have been obtained. What is needed is an adhesive which can be easily applied to the thin acetate sheeting, which can be freed readily of its volatile solvents, and which contains no chemicals that would exert any solvent power on the cellulose acetate itself. It must also be colorless and transparent when dry, and of a permanent or stable nature to withstand severe aging tests.

Of the solvent type of adhesives, solutions of acrylic resins in aromatic hydrocarbons have offered the most promising results, but means for the rapid removal of all traces of solvent from the adhesive film have not yet been perfected.

Attempts to utilize plasticized hot-melt adhesives containing no solvent will be made, coincident with further experimental work on the solvent described.

A number of manufacturers of laminating-machine equipment and several producers of cellulose-acetate sheeting processed with pressure-sensitive adhesive have been contacted in order to obtain comparative costs of commercial materials and equipment, cost being the determining factor as to whether this Office will continue its developmental work.

Samples of commercial cellulose-acetate sheeting with prepared adhesive surfaces have been tested with fairly good results, but the cost of this type of material has been found prohibitive for the purpose.

Correspondence has been exchanged with nine leading manufacturers of laminating-machine equipment. Eight firms stated they were unable to supply a machine to meet specifications. The other requested further information. Investigation will be continued along this line while exploring the feasibility of developing a machine in the Office.

Nylon Sewing Thread

During the year, research has been conducted on nylon threads to determine the relative values of nylon and cotton sewing threads for use in book-sewing and other bindery operations. Samples of the different sizes of nylon thread have been obtained from the leading manufacturers and tested in our laboratory for physical properties. These test results will be tabulated and compared with physical-property tests of similar cotton threads, after which performance tests will be conducted to rate each sample for its working qualities on the sewing machines. The complete report of this investigation will form part of a GPO-PIA joint research bulletin to be published in the near future.

Typewriter Ribbons

Experiments were begun in February of this year to determine the comparative working and lasting qualities of typewriter ribbons obtained from several sources. The results of these tests indicate that the use of higher grade ribbons than are employed at present throughout this Office would result in improved appearance of typewritten work, longer service from the ribbons, and a reduction in cost.

The ribbons subjected to these tests were black record typewriter ribbons, made from a high-grade cotton fabric testing 320 threads per square inch, and the grade of ribbon used at present, which is made from a cotton fabric containing 280 threads per square inch. In conducting the performance tests, samples of ribbons to fit typewriters of three standard makes were submitted to six divisions where considerable typing is done, with the request that the ribbons be placed in constant daily use until they were no longer serviceable. The reports of these tests concur in stating that the ribbons made from the high-grade cloth of 320 threads per square inch gave better performance throughout their working life, produced a more uniform color of typing, and lasted more than twice as long as the ribbons made from the lower grade fabric.

ASSISTANCE TO OTHER AGENCIES

As in previous years, the Government Printing Office, through its Division of Tests and Technical Control, has helped many other Government agencies in their problems relating to paper, ink, book-binding materials, and type metals.

An illustration of the nature and character of this service may here be given.

The War Department asked for help in analyzing inks and fountain solutions used in developing their new duplicating process, utilizing a parchment-paper plate in place of the zinc- or aluminum-grained metal plates usually employed in multilith printing. The aim of the investigation of these products was to develop specifications for their satisfactory purchase.

A number of commercial fountain solutions used in this process were analyzed. A formula, only slightly different from one of the commercial products, has been developed. It greatly lengthens the useful life of the parchment master plates.

The search for a better duplicating ink is still on.

Our ink chemist has been appointed to act as the chairman of the Federal Specification Committee to develop Federal specifications for lithographic duplicating materials.

CONTACT WITH PRINTING, BINDING, AND ALLIED ORGANIZATIONS

Cooperative contacts have been continued by this Division with the Technical Association of the Pulp and Paper Industry, American Society for Testing Materials, American Standards Association,

American Newspaper Publishers' Association, Lithographic Technical Foundation, International Association of Printing House Craftsmen, Printing and Allied Trades Research Association of Great Britain, and the Paper Makers Association of Great Britain and Ireland.

RESEARCH PAPERS

In connection with the Government Printing Office-Printing Industry of America, Inc., research program, described on pages 37-40, our Technical Director presented prepared manuscripts on selected subjects for consideration by the research committee. Of these, several have been published and a number are undergoing review or revision. Most of them are expected to be printed for use in the Office, and for sale through our Superintendent of Documents. The list of subjects is as follows:

- Newsprint
- Type metals
- News inks
- Ruling inks
- Bindery glues
- Bookbinding pastes
- Miscellaneous bookbinding adhesives
- Electrotyping
- Starch-filled book cloth
- Pyroxylin-treated book cloth
- Bookbinding leather
- Bronze stamping leaf
- Sewing thread
- Flax book twine
- Paperboards for bookbinding
- Control of warp in book covers
- Process of marbling papers
- Detergents in the printing industry
- Printer's paper troubles at the Government Printing Office
- Evaluating the printing quality of paper
- Paper standardization as an aid to the printer
- Government Printing Office paper tests and their significance
- Technical status of permanence and durability of paper
- Study of methods of evaluation of kraft paper
- Acidity in paper in terms of pH values
- New types of paper for Government service

During the year the following articles prepared in the Division of

Tests and Technical Control appeared in trade publications:

Detergents for the Printer, *Printing Equipment Engineer*, 74, No. 2: 15-17 (May 1947).

Alkaline Writing Inks, *American Ink Maker*, 25, No. 6: 29-37, 53 (June 1947).

CORRESPONDENCE

As in former years, all possible assistance has been afforded the printing industry. We made available the results of Office experience and furnished, when requested, helpful technical advice on industrial printing and bookbinding problems. Formulas developed in our laboratory have been freely given to the industry.

PUBLIC DOCUMENTS DIVISION

During the fiscal year 1947, the Public Documents Division turned in to the Treasury, as miscellaneous receipts from the sale of Government publications, an amount in excess of the entire appropriation for the operation of the Division. This was the first time in our history that this had been accomplished. It means that our sales function is not only self-sustaining but is paying the cost of non-revenue-producing functions, which are: (1) The compilation and issuance of official catalogs and indexes; (2) distribution of publications to designated depository libraries; (3) distribution of publications for other agencies of the Government; and (4) distribution for Members of Congress of their quotas of such publications as farmers' bulletins, soil surveys, and the Congressional Record.

All the functions of the Division are such that the Government Printing Office has no control over the volume of its work. The law requires inclusion in the official catalogs and indexes of information concerning every publication of the Federal Government. Every order or inquiry which the mail brings must be answered. There is also a legal requirement to prepare mailing lists and to perform mailing operations upon the request of any department or agency. Another legal obligation is to mail copies of the various publications which are allotted to Members of Congress on a quota basis. We are further required to supply 1 copy of every Government publication, upon request, to more than 500 libraries which are legally designated depositories for Government publications. Thus, our Public Documents Division is entirely a service agency and must be prepared to discharge with dispatch demands for its various services.

SALE OF GOVERNMENT PUBLICATIONS

The history of this Division has been one of constant growth since its organization in 1895. The sale of Government publications occupies the efforts of the largest proportion of personnel. Prior to 1932, each publication sold was "marked up" 10 percent above the cost of production, but the Economy Act of 1933 increased this "mark-up" to 50 percent and placed the sale of public documents on a revenue-producing basis. The amount turned in to the Treasury as miscellaneous receipts from sales (or "profits" not required to replenish stocks) has increased yearly since that time. In the fiscal year 1947, sales reached an all-time high of \$3,038,376.67. This represents an increase of 41 percent over the immediately preceding fiscal year and of 227 percent since 1939, the date of the last printed annual report.

The increase in sales and miscellaneous receipts is shown by the following comparative statement for the fiscal years 1939 to 1947, inclusive:

Year	Amount of sales	Miscellaneous receipts (earned)	Year	Amount of sales	Miscellaneous receipts (earned)
1939-----	\$928, 460	\$431, 567	1944-----	\$2, 099, 493	\$1, 112, 407
1940-----	1, 118, 051	495, 223	1945-----	2, 180, 476	1, 300, 483
1941-----	1, 342, 699	509, 575	1946-----	2, 156, 379	1, 355, 087
1942-----	1, 712, 539	675, 754	1947-----	3, 038, 377	1, 714, 399
1943-----	2, 366, 897	865, 543			

Appropriations for personnel and general expenses have not kept pace with the increase in volume of our work load. For this reason, our service for many years has been on a "when we can get to it" basis. For the past 2 years strenuous efforts have been made to improve service and to simplify and modernize practices in accordance with the patterns established by the best commercial mail-order houses.

The first major improvement in service consisted of the introduction in 1946 of an order blank. At present about 40 percent of all cash orders are placed on order blanks. This expedites the identification and location of publications and speeds mailing, since each customer addresses a label used in mailing the publications ordered. The co-operation received from the public has been most helpful.

An order blank for deposit accounts enables persons who maintain funds on deposit to keep an accurate check on the charges against their accounts. The balance is indicated when each order is filled.

Revision of the procedure for filling subscriptions placed this work on a current basis. For more than a year each subscription has been entered within 24 hours after receipt.

It is absolutely necessary in any Government activity to insure secure handling of Government funds. The Public Documents Division is, of course, no exception, and considerable time was formerly required in accounting for each order. Regulations required that the original orders be kept on file for a possible audit. As a result, it was difficult to explain to customers how their orders were handled, and the task of maintaining a file of more than a million letters was burdensome. Late in the current fiscal year a proposal made by us to the General Accounting Office provided for simplification of methods and allowed the return of each customer's order blank or letter in the package with the publications, together with any refund.

A microfilm record was proposed by us to provide the necessary accounting security. The General Accounting Office approved this simplified procedure, and in March 1947 each order became a complete transaction. When a customer now opens a package, he finds his original order blank or letter, together with the publications available. Notations on his blank or letter indicate publications that are not available; and if a refund is due, it is included. The result has been faster and better service. Single orders require only 48 hours to complete, and most requests for current publications that are placed on order blanks are filled within 24 hours. At present, extra time is required for complicated orders for both old and new publications, but our goal is a maximum limit of 48 hours for filling any order.

Through this new procedure, it is possible to handle more work. We have thus been relieved of maintaining a file of a million orders and letters, and we are no longer required to prepare about 175,000 refund vouchers in duplicate each year. More work has been handled faster with proportionately less personnel.

In an effort to get packages to their recipients in better condition, experiments have been made to improve the methods of packaging. The use of mailing cartons should make it possible to send publications without damage to destinations anywhere in the United States. In this connection, an innovation was tried with very satisfactory results. Customer reaction concerning the use of cartons was requested through the use of form letters enclosed in orders mailed. The results were most favorable, and we now have on file many complimentary letters on our use of cartons. With such confirmation of their value, the use of cartons has been extended with greater confidence in the results.

For many years we have been the only book publisher who has had no advance information concerning forthcoming publications. In many instances in the past, we have of necessity placed orders for documents about which we had little or no information. Such a system made it extremely difficult to determine the quantity to be ordered and did not

afford the reference staff any advance information with which to answer inquiries. A concerted effort has been made in this fiscal year to improve relationships with the Government agencies which originate publications. A plan has been worked out with our Production Manager to supply us page proofs of forthcoming documents. Thus, we are enabled to review in advance the contents to determine whether or not the proper number of copies has been ordered for sale; catalogers are enabled to make advance entries; price lists may be compiled in advance of the appearance of the publication; and the number of copies ordered for depository libraries may be more carefully reviewed.

In its sales function, the Public Documents Division is principally a mail-order house, but a sizable over-the-counter service is provided in our bookstore located on the first floor of building 2. For the fiscal year 1947, over-the-counter sales amounted to \$193,226.88, which represents a 31-percent increase over the previous fiscal year. This increase can be attributed largely to a new procedure which enables customers to review, in the bookstore, the more popular documents. Previously, there was no opportunity to browse, as only price lists were available from which customers could place orders. Our earlier practice was to request each customer to call for his order approximately 4 hours after he had placed it. Procedures have been worked out to guarantee delivery of any of the 65,000 different publications which are available within 20 minutes after an order is placed.

Work is nearing completion on a larger bookstore in a much more satisfactory location, in building 1. In this new store, it will be possible to display approximately 2,000 publications for customers to review before they make a selection. In addition, the new location will speed delivery. A 10-minute service is planned for all orders.

We have continued our efforts to sell accumulated stocks of slow-moving publications. This program turns into profits publications which would otherwise have to be disposed of as waste paper and makes available storage space badly needed for new publications. Experiments with advance announcements of forthcoming publications have been expanded, with gratifying results. This innovation of using advance announcements was started in 1946, and an enlarged program is now planned, in view of the outstanding success of the system.

Public documents are no longer mere dry, statistical tomes. They touch human living and American business at every hand. The Division of Typography and Design is continually working to make them more attractive and readable. Several popular publications have established sales records which entitle them to places in the Nation's lists of best sellers.

To date, there have been sold 3,907,329 copies of *Infant Care*, a

publication of the Children's Bureau which sells at 15 cents a copy; 2,265,038 copies of Prenatal Care, published for the same Bureau, at 5 cents a copy; 276,862 copies of Description of United States Postage Stamps, at 45 cents each; 339,974 copies of Furniture—Its Selection and Use, at 10 cents a copy; and 251,683 copies of a publication entitled "You Can Make It—Practical Uses of Second-hand Boxes and Odd Pieces of Lumber," at 15 cents a copy. Sales of Aunt Sammy's Radio Recipes have exceeded 79,795, at 30 cents each. Pilots' Power Plant Manual, Civil Aeronautics Bulletin No. 28, sells for \$1.25 a copy and has passed the 400,000 mark. Care and Repair of the House has exceeded 117,333 copies, at 20 cents each. Light Frame House Construction has passed 57,552 copies, at 45 cents each. More than 130,700 copies of Basic Photography, at 65 cents each, have been sold; and the sales of Veterans' Administration Pamphlet No. 44, entitled "Veterans' Benefits," have reached more than 43,400 copies, at 15 cents each.

A comparison of activities in the Public Documents Division for the fiscal years 1939, 1946, and 1947 shows a consistent increase for all operations, except the receipt and distribution of free publications:

Activity	1939	1946	1947
Number of sales orders.....	773, 464	941, 638	1, 262, 517
Number of letters of inquiry.....	321, 292	450, 023	632, 525
Publications received for departmental free distribution.....	79, 371, 182	90, 540, 209	86, 732, 005
Publications distributed free for governmental agencies.....	75, 249, 194	95, 057, 831	91, 972, 607
Number of publications sold.....	12, 748, 804	33, 088, 453	36, 941, 152
Number of publications distributed to depository libraries.....	3, 020, 419	3, 956, 374	4, 205, 716
Total publications received.....	103, 839, 696	136, 284, 855	156, 915, 245
Total publications distributed.....	96, 697, 013	138, 812, 159	149, 788, 080
Total publications condemned.....	2, 289, 611	3, 226, 313	7, 259, 127

CATALOGING AND INDEXING PROGRAMS

Cataloging of public documents is another important function of the Public Documents Division which has long been a target of condemnation by librarians. Since 1895 there have been two series of printed catalogs—the Monthly Catalog of United States Government Publications and the Biennial Document Catalog. The first has been a descriptive catalog, except for one session of Congress 40 years ago, when it appeared in subject form. It has been a single-entry catalog. The latter has been issued in subject form for each session of Congress and has been a multiple-entry dictionary catalog.

The Monthly Catalog was originally intended to be a sales medium for the Superintendent of Documents. However, its function as a library

tool quickly overshadowed its importance as a sales medium, as today only one-third of the publications cataloged are for sale.

As early as 1904 it was recognized that there was a great amount of duplication in the two cataloging programs. The Document Catalog listed all the publications entered in the Monthly Catalog, plus any publications which were received over 6 months after issue and any classified (secret, confidential, or restricted) publications which were later declassified. In 1904 a questionnaire was sent to librarians, asking, among other things, whether or not one cataloging program would not be superior to the two overlapping programs. Both catalogs were on a free basis at that time, and the replies were definitely not to cut out anything. Again, in 1944, the question of consolidating the cataloging programs arose, but again inertia won out against the proposed change.

The Document Catalog, by its very nature, was difficult to keep on a current basis. Almost from the start, it was 3 years after the close of Congress before it made its appearance. As Government publishing expanded, the task of issuing both the Document Catalog and the Monthly Catalog became more burdensome. Since the Monthly Catalog covered more or less current publications, it was given preference, and the Document Catalog fell farther behind. The First World War threw it 9 years in arrears, and since that time all efforts to place it on a current basis have failed.

The Document Catalog was a publication of highest quality. From the standpoint of sheer technical excellence it was far superior to any catalog produced by any other government in the world. The labor and cost of issuing this massive catalog reached staggering proportions in recent years. Exclusive of costs of the work done on the Monthly Catalog, which was used as the basis for the Biennial Document Catalog, the cost of each copy of this big book had passed the \$200 mark by 1947. Practically no copies of the Biennial Catalog were distributed on a sales basis, and only 800 persons requested a free copy.

For some years one group of librarians has been insisting that the Biennial Document Catalog be brought up to date and another group has been equally critical of the Monthly Catalog. Two years ago the Monthly Catalog was frequently issued late, and there was criticism that many of the publications were 2 or 3 months old when the catalog came out. An index was added in July 1945 and, while this feature increased the value of the catalog, it also added to the difficulty of completing each issue.

A survey of the cataloging programs and consultation with outstanding specialists in the field of public documents made apparent that neither cataloging program was satisfactory. The Document Catalog had reached the point where it was historic in nature. The

Monthly Catalog was being issued only with the greatest strain, was late in reaching subscribers, and was not as inclusive as it should be.

Since the close of the war, thousands of publications which were formerly restricted or confidential have been reclassified. These publications began to accumulate, as they awaited their turn to appear in the Biennial Document Catalog in the next 7 or 8 years. Since the documents were not included in the Monthly Catalog, librarians and scholars would have no knowledge of their existence until the Document Catalog made its appearance.

In view of all these problems, the decision was made that the Superintendent of Documents could best discharge his responsibilities to librarians and those who pay the cost of these programs by concentrating on only one all-inclusive cataloging program.

It was realized that the discontinuance of the Document Catalog would be criticized by many persons. When the Depository Invoice was discontinued, several years ago, the Office was flooded with letters from librarians who insisted that they could not carry on without it. Today there is no one who would argue that the discontinuance of the Depository Invoice was not a progressive step. It is believed that this will be repeated in the case of the cataloging program. A fast and inclusive cataloging service which will render the maximum service for each dollar spent is now planned.

A beginning toward more efficient cataloging has been made by speeding up the issuance of our Monthly Catalog. Subscribers received the April and May issues only about a week apart. For the first time in anyone's memory, the Monthly Catalog has appeared in the month following the receipt of the publications cataloged.

In the April issue of the Monthly Catalog we carried an announcement that many publications are being received in page-proof form. This enables catalogers to complete many preliminary cataloging operations in advance of the appearance of the publication. A new department, called Previews, has been instituted in the catalog. For the first time readers are given advance information of some forthcoming publications, and orders are scheduled for the delivery of the publications when they come off the press.

Work is now in progress on supplements to the Monthly Catalog, which will cover 2-year periods beginning with the Seventy-sixth Congress. These supplements will include all publications which were not included in the Monthly Catalogs because they were received late or were secret, restricted, or confidential. The first supplement will be ready in the fall of 1947. When this program is completed, librarians will have a catalog entry for every publication which has been received by the Superintendent of Documents.

Listing all publications in the Monthly Catalog and supplements will furnish the needed information to librarians who use our classification system. This was not the case when listings appeared only in the Document Catalog.

The chairman of the American Library Association committee on public documents has agreed to spend a month of his vacation this summer in making a survey of all cataloging and classifying operations in our Public Documents Division. Some of the most constructive changes in the programs in the past have resulted from suggestions made by him.

DEPOSITORY DISTRIBUTION

The Superintendent of Documents is required by law to furnish, free of charge, one copy of each Government publication requested by libraries which are designated as depositories for Federal documents. At present 558 libraries have been designated and, of these, 125 receive 1 copy of all publications. Many libraries have regarded the depository system merely as an opportunity to obtain free publications. Criticisms have reached Members of Congress that depositories are not being maintained as public libraries, as the law provides, and that documents are stored in basements or are lost or destroyed instead of being made available for general public reference. Many thousands of dollars are expended each year to provide depository copies of Federal documents. It is only sound business for the Government to insure that these funds are not wasted.

The limitation on travel funds for this Division has largely nullified any comprehensive program of regular and thorough inspection of the condition of depository libraries. The Division has only \$200 available for the next fiscal year for inspection purposes, but plans have been made to conduct an investigation program and also to mail a questionnaire to each depository to obtain facts concerning the handling of documents. A more comprehensive project can be based on information thus obtained.

It is recommended that the Congress appropriate sufficient funds for the fiscal year 1949 to enable this Division to inspect depositories on a regular and thorough basis.

The law provides that no publication be sent to a depository unless it has been specifically requested. To accomplish this, we issue a classified list which allows the libraries to make selections by classes. The latest issue of this list is now more than 5 years old and is out of date, since many new Government agencies have been created. The classified list has been completely revised and will be issued again

early in the next fiscal year. Supplying publications to depository libraries is one of the principal items in the "General expense" appropriation for the Division. The number of copies of publications supplied to depositories is increasing, and the unit cost of each item supplied has, of course, reflected rising costs of paper and labor.

Since we will have exactly the same funds to supply publications during the fiscal year 1948 as we had in 1947, it will be a real problem to meet legal requirements as to depositories and still stay within the funds available.

DISTRIBUTION FOR MEMBERS OF CONGRESS AND GOVERNMENT AGENCIES

The Public Documents Division distributes for Members of Congress such publications as farmers' bulletins, soil surveys, publications of the Children's Bureau, and the Congressional Record. Quotas of these publications are made available to Members of Congress in the various appropriation acts. Usually this distribution is heaviest during an election year, but distribution during the fiscal year 1947 was unusually large, approximating the volume of an election year.

We also act as an agent for Government departments and independent establishments in preparing and maintaining mailing lists and in addressing and mailing publications distributed by them. This distribution totaled 91,972,607 copies in 1947, which represents a decrease of approximately 3 percent over 1946. This decrease can be attributed largely to our program of urging Government agencies to promote the sale of their publications and to limit free distribution.

It has been our opinion for many years that free distribution should be limited and sales pushed. Some publications, of course, would not fit into such a program. Good examples are the Postal Bulletin, savings-bond promotional literature, social-security posters, etc. However, many departments distributed, on a free basis, publications which are for sale at the Public Documents Division. A large-scale free distribution greatly nullifies our sales efforts. We believe that the departments can best utilize their printing and binding appropriations by limiting their official distributions, and thereby using their funds to print more publications in smaller quantities. When a person pays a nominal fee for a publication rather than receiving it gratis, there is greater likelihood that he will read it. The Department of Commerce and the Office of Education are two agencies which have adopted the policy of promoting sales and discontinuing widespread free distribution. We are continuing our efforts to convince other agencies of the desirability of such a course.

PLANS FOR NEXT FISCAL YEAR

The following projects have been scheduled for the coming fiscal year:

1. Continuation and intensification of the program to modernize distribution methods. Strides have been made in increasing the efficiency and speed with which various functions are accomplished, but considerable room for improvement exists.

2. Survey of cataloging and indexing functions by a representative of the American Library Association is scheduled for the first month in the fiscal year 1948. We expect this survey to result in modernizing our cataloging and indexing functions and in the discontinuance of any effort which may be unnecessary in terms of the ultimate use of the printed catalogs and indexes.

3. Early in the next fiscal year our book store will be moved to a more convenient and more suitable location just inside the main entrance to building 1, on North Capitol at G Street. A large, bright room is now being renovated and equipped. Space will be available for the display of more publications, and service will be much faster than in the present location. An increase in over-the-counter sales is expected.

4. Substitution of labor-saving machinery for hand operations is a continuing function. A study will be made of the feasibility of installing a conveyor system to provide faster and more efficient delivery of publications from storage areas to wrapping and mailing points. This installation will, of course, be contingent upon obtaining necessary funds.

MAINTENANCE DIVISION

Responsibility for upkeep and repair of all buildings and all equipment operated by the Government Printing Office is vested in its Maintenance Division. A total of 405 employees were engaged in this work on June 30, 1947, as compared with 410 at the end of the previous fiscal year. In 1939 the Division had 296 employees, and the present total of personnel represents a 37-percent increase during the 8-year period.

In the meantime, occupation of new buildings in 1940 increased the gross floor area to 31½ acres, or approximately 49 percent. The acquisition in 1946 of the field offices has added still further to maintenance and engineering work. Forty of the additional employees are elevator, conveyor, and crane operators and 24 have been added to the power-plant force to handle air-conditioning, ventilating, pumping, and electrical switching installations.

Cleaning of lighting fixtures has been transferred from the Sanitary to the Electrical Section, and two machinists are permanently detailed to the Monotype Casting Section.

Over an 8-year period, maintenance work on production equipment has increased, and the difficulties in securing parts during the war years continue into the present. This problem has been aggravated by around-the-clock operation of equipment. The Division has devoted considerable time and effort to research and development leading to the building of special machines and the rebuilding or redesigning of existing machines in many production sections for special jobs. Outstanding examples are the conversion of a money-order press for printing and gumming of air-mail letters and the work being done to rebuild the Kidder press for production of snap-out forms.

Experiments also have been carried on with black-light lamps for plate burning, film and plate dryers, ink mixers, infrared drying units, and other innovations.

The creation of a Dispatching Unit during the year has greatly facilitated and expedited action on requests for service throughout the plant and in field offices located in the District of Columbia.

MODERNIZATION

Shortages of materials, manpower, and machinery during the war years have prevented modernization of plant and equipment. For the most part only normal replacements have been possible when absolutely necessary for dependable service, but some improvements have been made. Among the most important are—

Replacement of seven obsolete direct-current elevators in building No. 1 with new high-speed, larger-capacity, overhead-traction-type elevators.

Change from 25- to 60-cycle electric service and rewiring of buildings 1 and 2 for alternating current to remove hazards and increase efficiency and economy of operation.

Improvement of the fire-alarm and guard systems.

Installation of two new water-cooling compressors.

Installation of two new high-pressure air compressors.

Installation of a new incinerator and Rotoclone, capable of burning a thousand pounds of waste per hour without spreading flue gas or fly ash.

Modernization and improvement of pump facilities.

Modernization of lighting in the administrative offices.

Installation of a metalizing gun and auxiliary equipment in our machine shop for building up worn shafts and parts.

Modernization of fire-protection equipment in hazardous areas.

Installation of acoustical material to reduce noise level in work areas.

Considerable experimental work has been done to provide adequate lighting of the proper quality for various visual tasks. The Division also is experimenting with the functional use of colors to relieve eye-strain, reduce glare, distinguish hazards, and improve working environments. The American Standards Association color code has been adopted.

Additional improvements will be made as materials now on order are received.

PREVENTIVE MAINTENANCE

The Division does not wait for a machine to break down before it is repaired. By regular inspections of all equipment and the use of a history file based on the nature and frequency of repairs, maintenance requirements are dealt with in advance and major break-downs are avoided. This preventive-maintenance program has been extended even to replacement of light bulbs when they have reached their rated life expectancy. This method not only reduces light maintenance costs but also eliminates interruptions to production in workrooms. That this preventive-maintenance program is showing results is evidenced by our having been able to absorb \$25,000 worth of work in our field offices as well as other additional activities, without increasing personnel.

As provided by law (U. S. C., title 31, sec. 686), the Division, in addition to assisting other Government departments and agencies with emergency maintenance repairs, has built the following for use in connection with public printing: 602 wooden suitcases for Social Security Administration; 15 glass display cases and 64 open display racks for Commerce Department; and 1,150 wooden boxes for Library of Congress.

IMPROVED METHOD FOR EQUIPMENT LAY-OUTS

The secret of low-cost production is a good lay-out. Three-dimensional models of equipment and machinery have been made to scale in our carpenter shop from scrap wood. Extreme dimensions are accurate, but construction details are omitted. Whenever a proposal is offered for arrangement of new or present equipment in accordance with the sequence of operations, the models can be set up on a floor and photographed from any elevation to show aisle space, clearances, and relationship to other equipment.

This method saves much time in the drafting room and enables non-technical persons to visualize at once the appearance and efficiency of a workroom under any and all proposed arrangements. When flow charts can be superimposed on the photographs, the advantages of comparative lay-outs are evident at a glance.

PART V

Forecast and Conclusion

PLANS FOR THE FUTURE

During the war years and since the ending of hostilities greater emphasis has been placed by the Government Printing Office on the development of a service which will give the Government better printing more expeditiously and economically than could be obtained from any other source. It is our intention to exert every effort toward continued improvement of this service. With this thought in mind, many objectives have been added to our program for administrative development during the fiscal year 1948. A few of the more important are summarized here.

MODERNIZATION AND IMPROVEMENT OF MECHANICAL EQUIPMENT

The Office will take definite steps to modernize and improve its mechanical equipment. For this purpose, a committee, consisting of representatives of our Comptroller, Planning Manager, Production Manager, and Mechanical Superintendent, under the chairmanship of the Consultant on Methods and Procedures, will carefully review our mechanical equipment. A large amount of material is already on hand for the use of this committee. It will also assemble information concerning products, processes, machinery, and equipment, which will be considered as the program develops.

RAISING OFFSET LITHOGRAPHY TO DIVISIONAL LEVEL

Since its inception in the Government Printing Office, lithographic printing has been under the divided control and responsibility of the Divisions of Typography and Design, Platemaking, and Presswork. This spreading of supervisory responsibility has been a matter of real concern to the Production Manager and other officials, as it has long been recognized that diffusion of authority seldom attains the degree of accomplishment which can be achieved when all activities are coordinated under one head. The entire situation will be thoroughly studied with a view of establishing a production division for lithographic printing.

BETTER COORDINATION OF PLANT AND FIELD OPERATIONAL ACTIVITIES

By working with the Bureau of the Budget, we hope to obtain the simplification or elimination of the difficulties involved in the use of many different classes of money appropriated for "printing" and bring the operations of the central office and the field plants into line to meet more closely the agreements made when these plants were turned over to the Public Printer. The basic aim is to produce on large machines that work which lends itself to economical production on such equipment and to do on small, so-called duplicating machines only that work which a sound production policy dictates.

REVIEW OF COST ACCOUNTING AND PRODUCTION CONTROL

A review will be made of our cost-accounting and production-control systems to determine the adequacy and applicability of our procedures and the possibility of simplifying them. The Printing Industry of America, Inc., has offered to collaborate in this matter, primarily in the interest of the entire printing industry. Current commercial practices can thus be studied and adopted whenever the Government may benefit thereby. In connection with this review, our Scale of Prices will also be completely revised to eliminate inequities that may now exist.

REVIEW OF TITLE 44

At present, title 44 of the United States Code contains parts of laws that have become obsolete through passage of new legislation. Certain sections naturally are not as applicable in 1947 as they were in 1895, when many of them were adopted; other sections, though still appli-

cable, should be changed in order to assure more efficient printing and binding procedures. In some cases it appears that actual conflict exists between sections of title 44 and sections of other titles of the Code. In order to make recommendations for changes which will meet existing conditions and clear up difficulties attributable to outmoded legislation, the Office will review the printing and binding laws.

ESTABLISHMENT OF FACT-FINDING COMMITTEE

The need for a fact-finding committee and the steps taken to form it have been described at page 95. It is our aim to complete arrangements for the establishment of this committee during the fiscal year 1948.

IMPROVED DISTRIBUTION OF PUBLIC DOCUMENTS

The potential value of the Public Documents Division as a distributing medium for many important Government programs is not exploited as fully as it might be by making Government publications more easily available. It is the experience of the Division's book store that few visitors ever leave without making several purchases. It is believed that a great service to the public would result from the establishment of regional book stores, where Government publications could be purchased or ordered. The Office is studying the feasibility of operating such stores and expects to make appropriate recommendations for their establishment.

An inspection of depository libraries is planned within the limitation of funds currently available. Congress will be requested to appropriate sufficient funds for the fiscal year 1949 to enable this Division to inspect depositories on a regular and thorough basis.

ACQUISITION OF NEEDED STORAGE AND WORKING SPACE

Despite the occupation of new buildings in 1940, one of the greater handicaps to the Office is the need for additional space for our present volume of business. The phase of our contemplated building program described as project B would satisfy our present most urgent need; the other projects are of importance to our proper and efficient functioning. We shall attempt to secure, through the Public Buildings Administration, estimates for presentation to Congress, along with appropriate recommendation for action, leading to the fulfillment of the following:

Project A.—Demolish the old one-story power-plant building and erect an eight-story building, approximately 130 by 74 feet, connecting buildings 1 and 2. This building should have at least two elevators,

facilities for baling waste paper, and a receiving platform for incoming shipments of materials and supplies other than paper.

Project B.—Acquire and remove present buildings adjacent to building 4; and enlarge the warehouse—building 4—to extend along G Street NE., from North Capitol Street, a distance of 365 feet 9 inches. This should be a reinforced-concrete building, 87 feet 6 inches wide, containing three stories and basement and matching the present warehouse in architecture. It should have four freight elevators and a shipping platform to accommodate the largest commercial trailer vans.

Project C.—Acquire and remove buildings a distance of 216 feet along the south side of H Street NW., from the present property line west to the alley. Erect building to contain garage and blacksmith and paint shops. Allow space for automobile parking and material yard.

Project D.—Air condition buildings 1 and 2 and complete air conditioning of building 3. Include paper-storage areas, but omit power plant, metal-melting section, and general storage areas. Install, if investigation proves it to be practicable, air conditioning of certain other areas having heavy heat loads, such as electrotpe and stereotype molding, monotype casting, linotype composing, carpentry, etc.

Project E.—Modernize lighting throughout the old building, with extensive use of fluorescent fixtures.

CONCLUSION

The accomplishments of the Government Printing Office since the last printed annual report in 1939, and particularly during the war and emergency period, are a source of justifiable pride. We believe that the experience gained in working with the commercial printing industry and in manufacturing in our own plant under trying conditions will enable us at all times to meet the future requirements of the Government. Improvements in processes and procedures, often developed through sheer necessity, have now placed us in a position of having our work more nearly current than at any other time in the history of the Office.

